AGENDA
PLANNING BOARD
MARCH 9, 2020

AGENDA ITEM #5D
NEW APPLICATIONS-Completeness Review and Public Hearings

TACKLE PARTNERS, LLC; 37 SPENCER ST (Tax Map 78, Lot 5), zoned LD

CITY OF LEBANON ~ PLANNING & DEVELOPMENT

PLANNING BOARD

March 9, 2020 Meeting

Staff Memorandum – #PB2020-09-SPA

APPLICATION INFORMATION

Agenda Item: 5.D

Application ID#: #PB2020-09-SPA

Application Type: Site Plan Review of conversion of existing industrial/ commercial building to a multi-family dwelling with 25 residential units

Property Location & Tax Map: 37 Spencer St (Tax Map 78, Lot 5)

Property Owner/Applicant: Tackle Partners, LLC

Property Size: +/-1.42 acres *(per survey in applicant's plan set)*

Future Land Use Map: CBD

Zoning District: Lebanon Downtown (LD) District

Overlay Districts: Flood Plain District

Existing Improvements and Use:
A: +/-15,976 sq. ft. (gross) commercial/warehouse building constructed in 1965
B: +/-2,130 sq. ft. long storage shed
C: +/-4,732 sq. ft. (gross) industrial/ warehouse building constructed in 1965 *(per City Assessor's records)*

Proposed Improvements and Use:
Conversion of largest building (Building "A") to a multi-family dwelling, together with associated site improvements

Staff Attachments:

- 2/20/20 memo from Brian Vincent, P.E., City Engineer

HEARING NOTICE

TACKLE PARTNERS, LLC; 37 SPENCER ST (Tax Map 78, Lot 5), zoned LD: Request for an Amendment to an approved Site Plan to renovate existing warehouse space to create 14 additional residential units for a total of 25 units in the building. **#PB2020-09-SPA**

PLANS AND OTHER SUBMISSIONS

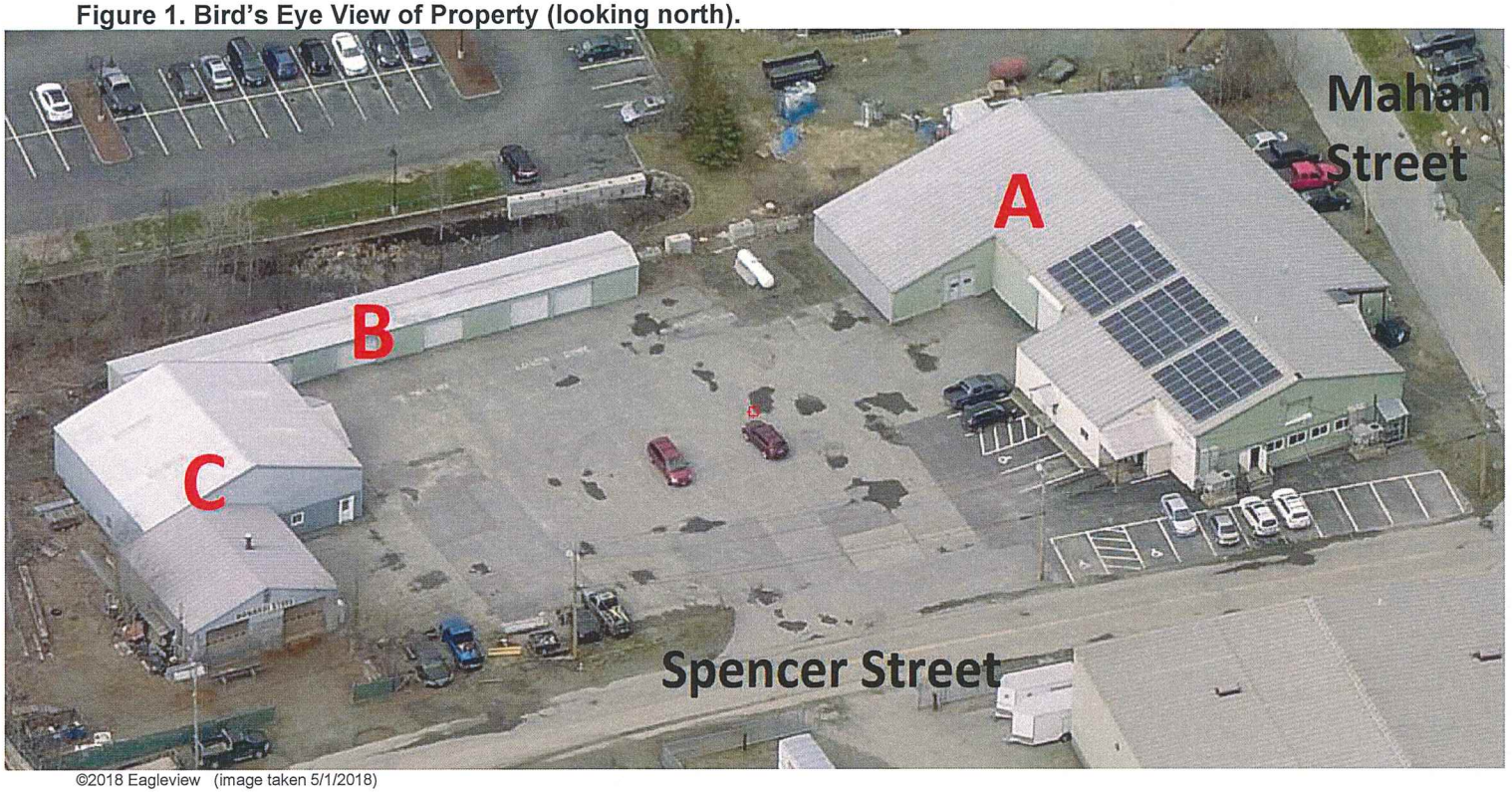
- Application form
- Support Statement for Site Plan Review (project description; 5 pages)
- Site Plan Review Regulations Technical Checklist (5 pages)
- Application for Waivers (2 pages)
- Support Statement for Conditional Use Permit: Lebanon Downtown District (3 pages)
- Lighting specifications for Lightolier SlimSurface LED fixtures by Signify (9 pages) and for Gardco LED Wall Sconce fixtures by Signify (7 pages)
- Plan set titled "Building and Site Renovations, 37 Spencer Street, Lebanon, NH" prepared by Engineering Ventures, PC, dated October 14, 2019, revised February 24, 2020, project #19327.01 (17 sheets)

COMPLETENESS REVIEW

The application has been reviewed in accordance with the Lebanon Site Plan Review Regulations. The applicant has requested waivers from certain submission requirements set forth in Article V, and from certain design requirements set forth in Article VI, as described below. Pursuant to Section 4.7.D of the Site Plan Review Regulations, staff has made a preliminary determination that the requested waivers meet the standards of Section 7.1 ("Waiver of Regulations").

The Planning & Development Department recommends that the Board find that the application is complete enough to accept jurisdiction and to commence review. Prior to making a completeness determination, however, staff recommends that the Board first consider the Applicant's waiver requests from the Article V submission requirements, described below. If the Board denies any such waiver request, a finding that the application is incomplete would then be appropriate.

Figure 1. Bird's Eye View of Property (looking north).



APPLICATION OVERVIEW

As described in the application materials, the property was developed in the 1960s as a steel-manufacturing facility and is improved with three (3) buildings originally constructed for that use. The existing buildings are shown in Figure 1 above. Outdoor storage areas used by the Building "C" tenant are located at the western end of the property.

The building that is the subject of this application is identified as Building "A" on Figure 1, and is 15,976 sq. ft. in size according to the City Assessor's records. Approximately half of Building "A" is occupied by a warehouse with the remainder of the building most recently occupied by a mix of commercial uses. Building "B" is a 2,130 sq. ft. long storage shed, and Building "C" is a 4,732 sq. ft. industrial building. Although the applicant is proposing to undertake some structural improvements to Building "C" concurrent with the plans to renovate Building "A", no change of use and no exterior changes to Buildings "B" and "C" are proposed at this time and, therefore, neither building is the subject of this application.

On November 25, 2019, the applicant obtained Site Plan approval to convert 8,632 sq. ft. of existing commercial space within Building "A" to a mixed-use multi-family and commercial building containing 11 studio apartments (#PB2019-29-SPR). The applicant now requests an amendment to the approved site plan in order to convert all of Building "A" to a multi-family dwelling containing 25 residential units. The proposed development will increase the Building "A" floor area to 20,200 sq. ft., and includes improvements to bring the building into compliance with the flood plain regulations, utility upgrades, and various site improvements including landscaping, redesign of the existing parking area, and curbing.

Changes to the approved site plan (which include the removal of an attached warehouse at the northwest corner of Building "A", resulting in a reduction of Building "A"'s footprint by 1,240 sq. ft.) are highlighted throughout the attached plan set with the use of bubbles, bolding, and other markers, and are described by the applicant in detail in the attached Support Statement for Site Plan Review.

Existing paved parking along Spencer Street at the front of the building (which currently backs out directly onto Spencer Street) is proposed to be removed and replaced with landscaping and a sidewalk. The applicant also proposed to install curbing and a sidewalk along Spencer Street as part of the redevelopment of the site. Existing gravel parking spaces at the rear of the building (which back out directly onto Mahan Street) are proposed to remain but will be paved. The existing interior parking area will be partially redesigned and will be partially landscaped in accordance with the Site Plan Review Regulations landscaping requirements.

STAFF COMMENTS

SITE PLAN REGULATIONS:

5.1 Drawings and Other Submittals

The applicant has provided the attached materials in accordance with the submission requirements of Section 5.1 of the Site Plan Review Regulations, together with waiver requests from some of the submission and design requirements, in accordance with Section 5.1.G.3 & Article 7 of the Site Plan Review Regulations. Please the attached document titled "Support Statement for Site Plan Review" for a discussion of the project, and the attached Application for Waivers for an explanation of the requested waivers.

6.1 General Requirements

The property is relatively flat with existing impervious surface of approximately 86%, and has historically been occupied by industrial uses. Building "A" has more recently been occupied by a mix of commercial and warehouse uses, but the property and improvements generally remain industrial in appearance, if not use. The proposed development will result in a reduction of the site's impervious area by 3,648 sq. ft.

The property is located entirely within the Flood Plain District. The building renovation constitutes a "substantial improvement" per Chapter 74 ("Flood Damage Prevention") of the City Code which requires compliance with the construction and design standards set forth in Article V of Chapter 74. The applicant will need to obtain a Flood Plain development permit through the Department of Public Works prior to the issuance of a building permit.

6.2 Landscaping Standards

The applicant has submitted a landscaping plan as required by Section 5.1.E.15 of the Site Plan Review Regulations and in accordance with the landscaping design standards set forth in Section 6.2 (except as noted below). As shown on the landscaping plan included as part of the plan set (identified as Sheet C2.2), the proposed landscaping includes the planting of a variety of trees, plantings and shrubs at the front of the building along the Mahan Street and Spencer Street sides of the building, including the planting of two (2) Kobus Magnolias trees, three (3) Flowering Dogwood trees, and three (3) Thornless Honeylocust trees.

As noted below under "Waiver Requests", and as described in the attached Application for Waivers, the applicant requests waivers from Section 5.1.E.15 (landscaping plan requirements); Section 6.2.B (perimeter landscaping requirements); and Section 6.2.D (landscaping around buildings requirements).

6.3 Utilities & Fire Protection

The property will continue to utilize City water and sewer systems. A sprinkler system will be installed in the building to be served by a line separate from the domestic water service line.

6.4 Fees and Assessments in Effect at time of Connection

The creation of new dwelling units will be subject to the City's Impact Fee Ordinance and fee schedule adopted by the Board on August 13, 2018.

6.5 Coordination of Roads, Parking, Loading, Recreation, and Safety

Various site improvements are proposed in the vicinity of Building "A" including walkways, curbing, restriping and redesigning the parking area between Buildings "A" and "C", and the installation of a sidewalk along a portion of Spencer Street. The applicant has requested a waiver from the requirement to construct a sidewalk along the entire length of Spencer Street and along Mahan Street. Staff supports the waiver request with respect to Mahan Street, but continues to recommend that the Board consider requiring a sidewalk along the length of Spencer Street.

The Building Inspector notes that 60% of the building's entrances are required to comply with the accessibility standards for accessible routes, which is a standard building code requirement.

Staff notes that the City is planning to reconstruct and upgrade Spencer Street in 2021 including the installation of sidewalks, curbing, drainage, and streetscape improvements. Given the timing of the Spencer Street reconstruction project, staff recommends that the Board require the applicant to determine the estimated cost of construction of any proposed improvements within and adjacent to the Spencer Street right-of-way that are likely to be impacted by the City's project. The goal is to have the applicant pay for the cost of the improvements they're required to make, but to avoid any redundancy of efforts and the possibility of the City having to remove streetscape improvements within months of installation by the applicant.

The applicant should work with Planning staff and the City Engineer to identify those aspects of the approved site plan to be constructed by the City instead of by the applicant. The applicant should provide a cost estimate for the construction of the improvements, to be verified and approved by the City Engineer. Staff recommends that the applicant shall pay an amount equal to the construction costs of these improvements to be placed in escrow and to be used by the City as part of the Spencer Street reconstruction project (in accordance with and subject to state law).

The applicant should also work with the City to identify any on-site improvements that will be constructed by the applicant, but which may be adversely impacted by the Spencer Street project and, therefore, should instead be secured until completion of the Spencer Street project.

6.6 Stormwater Management

The applicant requests a waiver from the drainage calculation and stormwater management requirements (Section 5.1.E.15 and Section 6.6). In support of the waiver request, the applicant notes that the project will result in a reduction of the site's impervious area by 3,648 sq. ft. However, as set forth in the attached memo dated 2/20/20, the City Engineer asks that the applicant indicate on the site plans how stormwater will be conveyed, resulting in positive drainage, within the street, following construction.

6.7 Lighting

The applicant has submitted a lighting plan in accordance with Section 5.1.E.12 of the Site Plan Review Regulations. As shown on the lighting plan (Sheet SL-1), the applicant proposes to install three (3) building-mounted fixtures along the Mahan Street-side of the building, two (2) building-mounted fixtures on the front façade of the building along Spencer Street, and one (1) building-mounted fixture on the west side of the building (facing the interior parking lot). Staff recommends that the applicant consider additional lighting along the west side of the building, as appropriate, now that the rear portion of the building is also proposed to be converted for residential use.

The fixtures are Gardco LED Wall Sconces with cut-off optics, manufactured by Signify. The lighting plan also indicates that SlimSurface LED lighting fixtures manufactured by Signify will be installed at various locations to illuminate porches and entrances.

Staff recommends that the applicant revise and update the lighting plan utilizing the correct site plan (an older version of the site plan – which includes the warehouse at the northwest corner of the building now proposed to be removed – appears to have been used to prepare the lighting plan), to add additional lighting along the western side of the building as appropriate, to remove parking space numbering, to remove the depiction of landscaping (which is inconsistent with what is depicted on the landscaping plan), and to update or remove the use labels on the building (which are inaccurate).

ZONING ORDINANCE:

Subsequent to the approval of the original site plan in November, 2019 and the filing of the current application, the subject property was rezoned to the new Lebanon Downtown (LD) District and is now subject to the requirements of Section 307 of the Zoning Ordinance (in addition to Section 6.10 of the Site Plan Review Regulations, "Additional Regulations for the Lebanon Downtown District").

Use

The proposed multi-family building is a permitted use in the LD District (except with respect to the lack of commercial space on the first floor, which the applicant asks the Board to "waive" by Conditional Use Permit – see discussion below).

Parking

There is no minimum number of parking spaces required nor any maximum number of parking spaces permitted in the LD District. Rather, per Section 607.4 of the Zoning Ordinance, parking requirements are determined by the Planning Board through Site Plan Review. The applicant proposes 44 on-site parking spaces for the site to serve all uses on the property, which is a reduction of one (1) parking space from existing conditions. A discussion of the proposed parking for the development can be found on the second page of the applicant's Support Statement for Site Plan Review (attached).

Conditional Use Permit per Section 307.6.B.2

The renovated building will be just over 20,000 sq. ft. in size. Because the building is located in the LD District and has frontage on a "secondary street" (Spencer Street), a portion of the first floor of the building must be reserved for commercial use pursuant to Section 307.6.B.1 of the Zoning Ordinance. The applicant, however, requests a Conditional Use Permit per Section 307.6.B.2 which allows the Planning Board to "waive" the first-floor commercial use requirements of Section 307.6.B.1 provided the applicant demonstrates that:

a. Non-residential uses on the street level story are inappropriate given the unique characteristics of the subject property.

b. The proposed development provides improvements to streetscapes, public ways, or public spaces that implement recommendations for downtown Lebanon in current plans, policies, or programs adopted by the City of Lebanon including but not limited to the Master Plan, Downtown Visioning Study, and the Capital Improvement Program.

c. The proposed development includes a high-quality design with attention to architectural quality and detail, universal accessibility, and/or environmental sustainability.

In order to approve the Conditional Use Permit request, the Board must also find that the proposal meets the Enhanced Performance Standards set forth in Section 302.4.D as follows:

1. The site is suitable for the proposal. This includes:

    a. Adequate vehicular and pedestrian access for the intended use.
    b. The availability of adequate public services to serve the intended use including emergency services, pedestrian facilities, safe access, and other municipal services.
    c. The absence of environmental constraints (floodplain, steep slope, etc.) proposed to be impacted by the intended use.
    d. The availability of appropriate utilities to serve the intended use including water, sewage disposal, stormwater treatment, electricity, and similar utilities.

2. External impacts: The external impacts of the proposed use on abutting properties and the neighborhood shall be commensurate with the impacts of adjacent existing uses or other uses permitted in the zoning district. This shall include, but not be limited to, water runoff, drainage, traffic, noise, odors, vibrations, dust, fumes, hours of operation, and exterior lighting and glare. In addition, the location, nature, design, and height of the structure and its appurtenances, its scale with reference to its surroundings, and the nature and intensity of the use, shall not have an adverse effect on the surrounding environment nor discourage the appropriate and orderly development and use of land and buildings in the neighborhood. The proportion of the site proposed to be occupied by impervious surfaces shall be minimized to the extent necessary to preclude unreasonable risk of runoff, erosion, sedimentation, and other potentially adverse on-site or off-site effects.

3. Character of the site development: The proposed layout and design of the site shall not be incompatible with the established character of the neighborhood and shall mitigate any external impacts on abutters, the neighborhood, and nearby public ways and infrastructure. This shall include, but not be limited to, the relationship of the building(s) to the street, the amount, location, and screening of off-street parking, the treatment of yards and setbacks, the buffering of adjacent properties, and provisions for vehicular and pedestrian access to and within the site.

4. Character of the buildings and structures: The design of any new buildings or structures and the modification of existing buildings or structures on the site shall not be incompatible with the established character of the neighborhood. This shall include, but not be limited to, the scale, height, and massing of the building or structure, the roof line, locations of access, and visual compatibility with the area.

5. Preservation of natural, cultural, historic, and scenic resources: The proposed use and layout of the site, including all related development activities, shall preserve identified natural, cultural, historic, and scenic resources on the site and shall not degrade such identified resources on abutting properties. This shall include, but not be limited to, identified wetlands, floodplains, significant wildlife habitat and documented wildlife corridors, stonewalls, mature tree lines, identified historic buildings or sites, scenic views, and viewsheds.

The basis for the applicant's Conditional Use Permit request is set forth in the attached "Support Statement for Conditional Use Permit: Lebanon Downtown District."

WAIVER REQUESTS

Pursuant to Section 7.1 ("Waiver of Regulations"), the applicant has requested waivers from certain provisions of Article V ("Submission Requirements") and Article VI ("Design and Construction Requirements") of the Site Plan Review Regulations as set forth in the attached Application for Waivers and as listed below:

- **Section 5.1.E.7** – *requiring the plans shape, size, height, and location of all existing structures, located on the site and within 200 feet of the site*
- **Section 5.1.E.15 & Section 6.2.B** – *landscape plan and perimeter landscaping requirements*
- **Section 5.1.E.15 & Section 6.2.D** – *landscape plan and landscaping around buildings requirements*
- **Section 5.1.E.16 & Section 6.6** – *requiring stormwater management plans and compliance with stormwater management criteria*
- **Section 6.5.B.4** – *requiring sidewalks along the street frontages*
- **Section 5.1.E.21 & Section 6.7.G** – *requiring plans for on-site recreational facilities for multi-family structures*

Staff has identified additional requirements of the Site Plan Review Regulations from which the applicant requires a waiver, and has asked the applicant to provide a written request for each:

- **Section 5.1.E.15 & Section 6.2.E** – *landscaping of parking areas and the parking lot shading calculations requirements*
- **Section 6.5.B.5** - *"Each site shall provide adequate access from public highways and sufficient maneuvering room for fire, police, and other emergency vehicles. The Fire Department shall provide information indicating whether or not this requirement is satisfied by the proposed plan. Minimum access requirements shall include a 50-foot turning radius and 22-foot fire lanes at the rear of the buildings."*
- **Section 6.10** - *Lebanon Downtown District regulations*
- **Section 7.2.A**- *prohibiting waivers from the landscaping requirements when needed to accommodate parking*

Pursuant to Section 7.1 of the Site Plan Review Regulations, the Board may grant a waiver of any part of the Regulations if it finds, by majority vote, that either:

A. Strict conformity would pose an unnecessary hardship to the Applicant and waiver would not be contrary to the spirit and intent of the regulations; or

B. Specific circumstances relative to the site plan, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations.

The applicant's basis for each waiver request is described in the attached Application for Waivers. Note that the granting of a waiver from a design requirement does not relieve an applicant from making the improvements that are depicted on the approved site plan, even if the depicted improvement would have been covered by the waiver had it not been included on the approved site plan.

STAFF RECOMMENDATIONS

If the Planning Board moves to approve the applicant's request, then based on the information reviewed by City staff, the Planning & Development Department recommends that the Board approve the application subject to the following conditions:

Conditions to be Satisfied Prior to Application for a Building Permit

1. The applicant shall schedule and hold a pre-building permit application meeting with the Planning Department, City Building Inspectors, City Engineer/Department of Public Works, and Fire Department, in order to help streamline the building permit review process and to review applicable code requirements.

2. The applicant shall obtain approval from the City Council or the City Manager's office for any additional water and/or sewer flows per Chapter 181.

3. The applicant shall address the comments set forth in the attached memo from Brian Vincent, P.E., dated February 20, 2020, to the satisfaction of the City Engineer.

4. The applicant shall provide two (2) revised plans sets depicting the following revisions, to the satisfaction of the Planning & Development Department and the City Engineer:
   a) Any changes made pursuant to Condition of Approval #3.
   b) Add sheet numbers to bottom right corner of each plan sheet so that each sheet is identified as "Sheet ___ of ___".
   c) Finalize plan set by removing all clouding, bolding, and other markers used to identify changes from the previously approved site plan (#PB2019-29-SPR).
   d) Remove all references to the "CBD" or "CB District" and/or change references to "LD" or "LD District" (see Sheet C0.0 and C1.1).
   e) Revise Sheet SL-1 to use the correct site plan (including the removal of the warehouse at the northwest corner of the building), to remove parking space numbering, to add additional lighting along the western side of the building as appropriate, to remove depiction of landscaping, and to update or remove the use labels on the building (which are inaccurate).

Conditions to be Satisfied Prior to the Issuance of a Building Permit

5. The City shall retain the services of an independent third-party inspector, for which the applicants shall be responsible for all inspection fees related to the construction of sewer and water both on-site and work within the City's right-of-way (water, sewer, road, drainage), in accordance with Chapter 181 of the City Code and Section 8.3 of the Site Plan Review Regulations. The applicant shall provide funding for inspection services in a form acceptable to the City.

6. The creation of dwelling units shall be subject to City of Lebanon Impact Fees, pursuant to Section 213 of the Zoning Ordinance. The Impact Fee shall be calculated at the time of Building Permit issuance based on the Impact Fee Schedule adopted on August 13, 2018. In accordance with RSA 674:39, the approved site plan shall be exempt from any future changes in impact fees and methodology for five years from the date of approval; however, any building permits which are issued after the end of that five-year period shall be fully subject to whatever impact fees and methodology are in effect at the time of building permit issuance.

7. All water and sewer fees shall be paid.

Conditions to be Satisfied Prior to the Issuance of a Certificate of Occupancy

8. Third-party engineer or design engineer inspection reports and as-built drawings provided by the applicants (PDF format and CAD .dwg format, using the NH State Plane Coordinate System), including tie sheets, shall be reviewed and approved by the City Engineer prior to acceptance of any utility improvements by the City.

9. The impact fee calculated pursuant to Condition of Approval #6 shall be paid.

10. The applicant shall work with Planning staff and the City Engineer to identify those aspects of the approved site plan on or adjacent to the site to be impacted by the City's Spencer Street reconstruction project, and shall provide the City with a cost estimate for the construction or installation of those improvements, to be verified and approved by the City Engineer. The applicant shall pay an amount to the City equal to the construction or installation cost of these improvements, which shall be placed in an escrow account to be used by the City in connection with the Spencer Street reconstruction project (in accordance with and subject to state law).

11. All improvements depicted on the plan shall be completed, and shall be constructed as depicted on the plan, except as provided for in Condition of Approval #10.

General Conditions

12. The applicant shall obtain an Excavation Permit from the Department of Public Works for any site work in the public right-of-way prior to any work in the right-of-way.

13. The applicant shall implement and maintain NHDES Site Specific Best Management Practices before, during, and after construction.

Attachments

cc: Tackle Partners, LLC (via e-mail)
File

51 NORTH PARK STREET, LEBANON, NEW HAMPSHIRE 03766
TEL: 603-448-1457 FAX: 603-442-6141 WWW.LEBANONNH.GOV

CITY OF LEBANON
DEPARTMENT OF PUBLIC WORKS
ENGINGEERING
193 Dartmouth College Highway
Lebanon, NH 03766

Staff Review Comment Sheet

To: David Brooks, Planning and Development Director

From: Brian Vincent, PE, City Engineer

Date: February 20, 2020 Applicant Name: Tackle Partners, LLC

Tax Map 78 Lot 5

The following documents were reviewed, received October 28, 2019:

1. Site Plan Review plans titled "Building and Site Renovations, 37 Spenser Street, Lebanon, NH" dated October 14, 2019, revised February 10, 2020.

NOTE: In order for the City to proceed with technical review of your application, all of the information requested below mush be addressed in full. In order to facilitate the process, your written response letter/memorandum must be formatted to coincide with the information as requested below; i.e, each numbered item below must be likewise numbered in your response.

Review Comments:

1. All design plans should be stamped by a NH-Registered Professional Engineer.
2. The Zoning Chart notes that no parking spaces are required. This appears to be an error. Please address.
3. Please provide sewer and water demand calculations.
4. Please provide a demolition plan or show and note proposed demolition on the site plan.
5. Please provide a detailed parking summary to include spaces/use, location and total number of compact spaces and allowed, ADA spaces provide and required, and total spaces provided and required.
6. The proposed project includes adding curbing within the City ROW. Please indicate on the site plans how stormwater will be conveyed, resulting in positive drainage, within the street, following construction.
7. Please provide existing catch basin rims, drain manhole cover and pipe invert information within the immediate project area.
8. Please indicate the proposed sewer service slope and invert elevation at the building.
9. Please provide a sewer service profile to confirm no conflicts with existing utilities.
10. Please clearly note on the site plan if the proposed sewer service connection is intended to be connected to drop manhole or standard sewer manhole. Details of both types of sewer manholes were provided.
11. A temporary erosion control detail sheet was provided in the plan-set; however, no erosion control plan was provided. Please address.
12. Please show and note any new roof drains or new foundation drains locations, pipe sizes, details and discharge locations.

13. Please submit an Application for Floodplain Development Review Permit given that the subject property is within the 100-year Floodway/Floodplain.
14. Further review of plans will be performed upon receiving revised stamped plans.

CITY OF LEBANON
APPLICATION FOR

SPECIAL EXCEPTION	☐	☒	SITE PLAN REVIEW
VARIANCE	☐	☐	SUBDIVISION
MOTION FOR REHEARING	☐	☐	LOT LINE ADJUSTMENT
APPEAL OF AN ADMIN. DECISION	☐	☐	CONDITIONAL USE PERMIT

☐ OTHER _____

PROPERTY OWNER (APPLICANT):

NAME: TACKLE PARTNERS, LLC c/o MEG CARLETON TEL.#: (603) 643-3068

MAILING ADDRESS: 279 DOGFORD ROAD, ETNA, NH 03750

E-MAIL ADDRESS: TACKLELLC@GMAIL.COM

CO-APPLICANT, AGENT, OR LESSEE:

NAME: TEL.#:

MAILING ADDRESS:

E-MAIL ADDRESS:

PROJECT LOCATION:

TAX MAP #: 78 LOT#: 5 PLOT #: ZONE: CBD

STREET ADDRESS OF PROJECT: 37 SPENCER ST, LEBANON, NH 03766

IS THIS PROPERTY LOCATED IN THE: **WETLANDS** ☐ YES ☒ NO **HISTORIC DISTRICT** ☐ YES ☒ NO

FLOOD PLAIN ☒ YES ☐ NO

SCOPE OF PROJECT:

Renovate and convert an office and warehouse building space to 25 residential units and make exterior building and site improvements. Portions of the exiting site associated with other building on site are to remain unaltered.

TYPE OF OCCUPANCY:

EXISTING ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☐ MULTI-FAMILY ☒ COMMERCIAL ☒ INDUSTRIAL

PROPOSED ☐ VACANT ☐ ONE FAMILY ☐ TWO FAMILY ☒ MULTI-FAMILY ☐ COMMERCIAL ☐ INDUSTRIAL

IF USE IS **COMMERCIAL** OR **INDUSTRIAL**, PLEASE NOTE **SPECIFIC** USE: _____

SIGNATURE BLOCK:

FOR PLANNING BOARD APPLICATIONS ONLY: I, the undersigned, hereby submit this application on the date noted below with the knowledge and understanding that the Planning Board shall determine if the submitted application is complete according to its regulations at its next regularly scheduled meeting on 9 March, 2020, unless I personally request, in writing, that the Board delay its determination of completeness to a later date.

PROPERTY OWNER: Margaret S Carleton DATE: 10 Feb 2020

NOTE: IF, AS OWNER, YOU WISH TO DESIGNATE AN AGENT TO ACT ON YOUR BEHALF, PLEASE READ THE FOLLOWING AND SIGN BELOW: I hereby designate the person listed above as my agent for the purpose of procuring the necessary local permits for the proposed work as described herein. Representations made by my agent may be accepted as though made by me personally, and I understand that I am bound by any official decision made on the basis of such representation.

PROPERTY OWNER: _____ DATE: _____

DATE RECEIVED	FILE # (MAP/LOT)	APPLICATION #	FEE - $ AMOUNT	DATE PAID	VOUCHER #
2/10/20	78/5	PB2020-09-SPR	866.00	2/10/20	17560

(Last Revised 4/04/18)

Tackle Partners, LLC

SUPPORT STATEMENT FOR
SITE PLAN REVIEW

PROJECT DESCRIPTION:

Tackle Partners, owner, seeks to convert 37 Spencer Street (Parcel 78-5) into 25 residential studio apartments. Along with 25 Spencer Street, which occupies the same lot, it has been commonly known as the K-Ross/Barker Steel property, with two original 1960s-era Butler buildings and long storage shed on 1.38 acres in the Lebanon Downtown District (LDD). The Property also is located in the Special Flood Hazard Area Zone AE.

The site was formerly a steel-manufacturing facility, but 37 Spencer Street has been most recently occupied by a number of commercial tenants: Monmaney Painters (2003-2014), Hanover Hardware (2001-2018), The Mosenthal Clinic (2009-2018), Mason Storage (2019), and Geokon (2007-present) In 2018, primary tenants were vacated in anticipation of improvements to the building, as well as the primary tenant at 25 Spencer.

FEMA rules have thus far prevented desired building upgrades because the necessary level of investment would have been considered a "substantial improvement". This triggers mandated flood compliance modifications, the cost of which could not be supported by the rents brought in by commercial clients.

The building has thus been in slow but steady decline since its heyday as a structural steel manufacturer, and even then, it was not considered a "pretty" place, but nor was it expected to be. Post-industrial communities are struggling to move forward, and have had to abandon buildings that have become obsolete to their original purpose.

However, applying a residential model to the building allows for building upgrades *and* flood compliance, while remaining fiscally possible. Multi-family housing is allowed as a permitted use in the LDD.

37 Spencer Street:

In November 2019, the Planning Board granted approval for the first phase of what we had thought would be a two-part renovation. The essential elements of that approved plan remain unchanged. However, construction estimates came in much higher than anticipated and prompted a review of our strategy. A large portion of

the cost was going to structural and utility upgrades that couldn't be supported by only 11 proposed apartments. We were also concerned that putting established tenants though the inconveniences of a Phase Two construction would not be a happy experience. The Board had also expressed doubts about the compatibility of residential and warehouse uses, which was a valid critique.

Completing the entire residential conversion in one go had the benefit of reducing per-square-foot costs of construction significantly. It also allowed deeper exploration into what else might be offered to the residential experience. For example, what had been an uninteresting hallway that allowed for an office to serve the warehouse, now becomes a large and welcoming lobby. As a hub, tenants will have a cozy area to wait for their ride, sort through their mail, or do their laundry. A more cohesive and efficient design also incorporates many of the new Zoning guidelines that are being presented to the voters shortly. Thus, we are seeking to amend our original plan to accommodate the following changes:

We are now seeking to add an additional 14 to the original 11 apartments by converting the warehouses at the rear of the building and changing the way the two sides will marry in the middle, to provide an enhanced residential feeling. The building footprint will shrink by 1240sf with the removal of the small warehouse on the NW corner of the building, with only minor increases to allow for covered entries and ramps required for access and safety.

Building improvements will trigger FEMA rules as they did in the previous application, requiring that the level of the first floor be raised above the Base Flood Elevation (BFE) or 20", and City codes require further elevation of a foot. This would bring it to roughly 5' above the grade level of Spencer Street. Two handicapped ramps are planned for access and safety: We have added a ramp on the north side of the building and redesigned the ramp depicted on the courtyard-side main entrance to the west to envelop a small pocket garden. Two handicapped parking spaces are planned at the ramp to the main entrance.

Design: From the outset, the vision has been to preserve the essential character of the industrial buildings that have anchored this area since 1965. Great pains have been taken to repurpose and highlight the steel superstructure into the common areas of the building, and we have used the distinctive Butler Building shape to guide us. The Visioning Study asks that we consider "massing" in the design, which includes the elements of building size and scale, the shape and size of interior spaces, useful functioning, character, place, balance, and feasibility. In this case, the existing building had its own ideas.

The original building at its core is 120' x 60', constructed in six uniform 20' x 60' sections, with other sections added on over the years. The exigencies of constructing within this framework dictated the size of the apartments, which are all between 500-700 sf. Attached to the main building at indeterminate times were two warehouses and a high-bay garage. The small 1240 sf warehouse in the NW corner

is being eliminated, as its structural, historic and design value was deemed insignificant.

The biggest structural change raises the core section by 8' to allow for a proper second floor height, which has the delightful effect of breaking up the large "eyeless" roof and gives the impression that the building is at last proud to be able to pick up its head and stand up straight. In the old commercial building, the shallow roof slope on the unraised sections created wasted cavities of space. These same cavities become charming and vital when revealed as cathedral ceilings in most of the first floor units. Exposure of the old steel scissors trusses in the second floor hallway and gable apartments is interesting and dramatic.

In addition to the physical layout, we also considered how the design would facilitate the daily interactions of residents. The main entry is oriented to the west, a "beeline" from the downtown area and Spencer Street. A broad stair and ramp converge and draws residents into a large lobby with seating, mailbox area, and the main stairs to the second floor.

We were mindful that apartment living can be great for fostering a sense of community, and yet we also wanted to balance that with privacy. The hallways are offset on either side of the lobby on the first floor, and doorways are recessed from the corridors to allow for some personalization and reduce the "bowling alley" effect. All first floor units have a semi-private front porch providing a main entrance, shared with only one neighbor; the second floor units have decks and balconies. Inside, all connect via hallways to the common central lobby area and large laundry room. We expect 2-3 units to be fully accessible. An elevator is not required for a two-story building.

The City Engineer has confirmed that this is within the limits of public utilities and services. Installation of a sprinkler system for fire safety is planned. The building currently sports a 26.7kW solar array supplying the bulk of its electric needs, connected to the grid with net metering.

Parking: The existing gravel parking area along Mahan Street will be upgraded to pavement and provide approximately 6 parking spots for units located along Mahan Street and on the first floor, reached via a sidewalk which directly connects the north entrance to the parking area and Mahan Street porches (new).

18-20 regular spots (including two hdcp) will be specifically reserved for 37's tenants in the common parking lot, which is shared with 25 Spencer. Ten existing spots (2 of which are hdcp) along Spencer Street will be eliminated to make room for a new sidewalk in front, reducing 37's available parking from 38 to 26 spots.

Most of the property is currently covered with asphalt, but a significant portion of this will be removed in favor of green spaces, gardens and walkways. A rethink of the parking area added a heat island for the 37 side. This layout has the added

advantage of enabling shared commercial and residential use of available parking, with their staggered hours of prime use, thus reducing the amount of spaces – and asphalt – required.

In addition to using a portion of the existing long storage shed as a site for trash and recycling, there will also be room set aside for personal cold storage and a bike room designed to provide dry, easy in-and-out secure shelter. Given the proximity to the Carter Community Center and the Rail Trail, we expect this to be a popular perk.

CONCEPT CONFORMITY WITH THE MASTER PLAN:

CHAPTER 3: LEBANON CENTRAL BUSINESS DISTRICT:

CH 3 Key Points: "Downtown revitalization efforts should focus on rehabilitating and fully occupying existing buildings. Increasing the walkability of Downtown is a priority. Downtown vitality will be enhanced by increasing the number of people living within the CBD."

CH 3 C-2: " The proximity of residential neighborhoods (Spencer Street) to the CBD supports downtown vitality and increases residents' quality of life... Neighborhood residents create a customer base that many downtown businesses rely upon to remain profitable."

CH 3 D-1: "Focus should be on continued build-out, redevelopment, and intensification rather than development of new properties. The mixed-use sites, with substantial infrastructure already in place, will tend to cost the City less than similar new development located in outlying areas that would require new infrastructure and services. In general, mixed use of structures should be encouraged."

CH 3 D-6: "Having a concentration of housing in and around the CBD contributes to the pedestrian scale of the community and the historic "small town" feeling. Any new housing development within the CBD should be directed to the population groups who most need to be within easy walking distance of the City's core. The location of additional workforce and other housing opportunities will foster the vibrancy of the downtown and a healthy local economy. Housing of this type can be developed in the upper floors of professional buildings."

CHAPTER 7: HOUSING

CH 7 C-3: "Developments such as Spencer Square and Emerson Gardens are better situated to enable residents to socialize and walk to jobs, errands, or to the bus stop."

CH 7 D-1: Good planning principles can ensure that residential development is consistent with the goal of building livable, walkable communities and the reduction in the additional traffic increase that development can otherwise bring. These principles can result in the creation of new neighborhoods rather than merely assembling houses."

FUTURE DEVELOPMENT

25 Spencer: The building is leased through Dec 2021 (Bonardi Steel, Geokon). The small vacant space still available will provide a base of operation during construction and serve as management office during the initial lease-up period.

It is unlikely that 25 Spencer would lend itself to residential conversion as it lacks sufficient height to do so. However, upgraded office space, retail, or restaurant uses are all possible, which would end the current legal non-conforming warehouse use.

SUMMARY

The November 2016 Downtown Vision Plan has identified Spencer Street as an important target for the revitalization of the Downtown area. As a family-owned, privately held parcel, our plans are ambitious - rooted in respect for the past yet with a clear eye towards future possibilities.

Furthermore, we believe that this adaptive reuse represents the highest and best use of the property. It eliminates a legal non-conforming warehouse use, revitalizes a derelict building, mitigates impact in the flood zone, and provides much needed housing to the downtown. We believe that revisioning, repurposing, and redeveloping our old industrial buildings adds a layer of historic interest and patina to the bright-and-shiny being newly constructed.

CITY OF LEBANON, NH
SITE PLAN REVIEW REGULATIONS
TECHNICAL CHECKLIST

PROJECT NAME:

37 Spencer Street Renovations

APPLICANT: Tackle Partners, LLC c/o Meg Carlton	**DATE:** 02/10/2020

GENERAL SUBMISSION REQUIREMENTS:

All applications to the Planning Board for Site Plan Review must be submitted by 12:00 Noon on the day of the filing cutoff. [§4.7.C] **Submissions must be accompanied by the following information or review of the application may be delayed:**

- [X] **A properly completed and signed Application Form.** [§5.1.A]
- [X] **The appropriate filing fees.** [§5.1.B]
- [X] **A written project description.** [§5.1.C]
- [X] **A list of the names and mailing addresses of all persons to be notified, by certified mail, of the public hearing.** [§5.1.D]
- [X] **A completed and signed Technical Checklist.** [§4.7.B]
  [Applicants must complete the entire checklist to ensure that all necessary information and materials have been provided with the application or that written requests for waivers have been properly provided in accordance with Article VII of the Site Plan Review Regulations, as appropriate.]
- [X] **Eight (8) sets of project plans to be distributed for Staff Review.** [§5.1.E]
  [A Staff Review meeting is held at City Hall one (1) week following the cutoff date. Staff Review meetings begin at 2:00PM, unless otherwise noted. All revised and/or additional information or materials must be submitted within one (1) week following the Staff Review meeting.]
- [X] **A digital copy of Site Plan drawings in .PDF format.** [§5.1.F]

NOTE: Applications shall contain sufficient information to enable the City Staff and the Planning Board to evaluate the proposed development for compliance with the Zoning Ordinance, the Planning Board's Regulations, and other applicable City Codes, and for the Planning Board to make an informed decision.

All required application materials shall be submitted as a single inclusive package, including any appropriate waiver requests as permitted by the Regulations. Submission of a complete application package ensures that the review process by City Staff is as efficient and effective as possible.

The purpose of the filing deadline is to provide adequate time for City review of the proposal. Submission of any altered, additional, or substitute application materials required by Article V of these Regulations, subsequent to the filing deadline, other than as directed by City Staff, shall cause the application to be deemed untimely filed, and such application shall not be heard until a subsequent month.

PLAN SUBMITTAL TECHNICAL CHECKLIST:

NOTE: Site plan drawings shall include the information described below pursuant to Article V of the Lebanon Site Plan Review Regulations. Plans shall be submitted on sheets no larger than 24" x 36". Plan sets with multiple sheets shall include sheets of uniform size and be bound on the left edge. When more than three (3) sheets are required, an additional cover sheet shall be attached including a table of contents. A scale of not smaller than one (1) inch equals 40 feet is suggested. All lettering shall be of a size and type that is legible.

In order to facilitate the use of the City's Geographic Information System (GIS) for planning purposes, all surveys and engineered plans submitted for Site Plan Review shall utilize the NH State Plane Coordinate system and shall reference the North American Vertical Datum of 1988 (NAVD 88), unless prior approval to use an alternate coordinate system and/or vertical datum is granted by the Planning Office.

A written request for waiver shall be required, pursuant to Article VII of the Site Plan Review Regulations, for any submission requirement for which the information or data is not provided by the applicant. [§5.1.G(4)] NOTE: The submission requirements described in paragraphs 5.1.E(1) through 5.1.E(4) shall not be waivable under the procedures of Article VII of the Site Plan Review Regulations. [§5.1.E]

Plan Requirements	Info. Provided	Waiver Sought
5.1.E(1) - Vicinity sketch (suggested scale: 1" = 500').	X	*N/A*
5.1.E(2) - Names and mailing addresses of Applicant; Owner(s) of Record of site; Owners of abutting properties; and Holders of any easements, rights-of-way, or other restrictions.	X	*N/A*
5.1.E(3) - Names and business addresses of preparer(s) of the plan, and every surveyor, engineer, architect, soil scientist, or wetlands scientist whose professional seal appears on any plan or document submitted to the Board.	X	*N/A*
5.1.E(4) - The following information shall be provided on the first page (or cover page, if applicable) of the Site Plan:		
a. Name of the City and County in which the development is proposed;	X	*N/A*
b. North arrow;	X	*N/A*
c. Scale of the plan;	X	*N/A*
d. Date of the plan and of any revisions to the plan; (NOTE: The date on the plan at the time of initial submission for application review shall be included on all subsequent submissions to the City. Any subsequent change(s) to the plan shall include a revision date and description of the revision(s).)	X	*N/A*
e. The following basic site information in TABLE FORM:		
1. Zoning designation for subject property;	X	*N/A*
2. Tax Map and Lot number(s) for subject property;	X	*N/A*
3. Area of lot;	X	*N/A*
4. Gross floor area of existing and proposed buildings/additions;	X	*N/A*
5. Number of existing and proposed off-street parking spaces;	X	*N/A*
6. Number of existing and proposed loading spaces;	X	*N/A*
7. Height of existing and proposed buildings/additions;	X	*N/A*
8. Number of stories and gross square footage of each;	X	*N/A*
9. Proposed use;	X	*N/A*
10. Required and proposed front, side, and rear yard setbacks;	X	*N/A*

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(4) *(continued)* – e. The following basic site information in TABLE FORM: 11. Maximum allowable lot coverage with existing and proposed calculations; 12. Indication of whether or not the property is subject to any City Overlay districts (for example, the Wetlands Conservation District or Flood Plain District) or to NHDES Shoreland Water Quality Protection jurisdiction.	☒ ☒	*N/A* *N/A*
5.1.E(5) - Current survey certified by a land surveyor licensed in NH, depicting perimeter boundaries of the lot(s), with compass bearings, distances, and lot areas, and depicting the location of existing improvements on property.	☒	☐
5.1.E(5) - Width and location of rights-of-way and/or easements on property.	☒	☐
5.1.E(6) - Existing and proposed grades, including topographic contours with spot elevations, (referenced to USGS or FEMA Flood Insurance Rate Map datums, as appropriate) prepared by a professional engineer or land surveyor licensed in NH. (Where grades are less than 20%, contours shall be at 2 ft. intervals; otherwise they shall be at 5 ft. intervals.)	☒	☐
5.1.E(7) - Shape, size, height, and location of all existing structures located on site and within 200 feet of site.	☒	☒
5.1.E(7) - Elevation views indicating shape, size, height, and location of all proposed structures, including expansions of or additions to existing buildings. Such elevation views shall provide sufficient detail to allow for review by the Board and City staff of the adequacy of proposed access and egress points, walkways, lighting, and other site-related improvements.	☒	☐
5.1.E(8) - Location of existing natural features such as streams, marshes, lakes, ponds, wetlands, rock outcrops, or wooded areas, and existing man-made features such as roads and structures. Indicate those natural and man-made features that are to be removed, retained, or altered.	☒	☐
5.1.E(8) - Wetlands on the property, if any, shall be delineated by a NH Certified Wetlands Scientist, whose seal and signature shall appear on the plan. Documentation in the form of U.S. Army Corps of Engineers New England District Wetlands Delineation Data Sheets and/or other field notes and materials concerning the delineation shall be submitted.	**N/A**	☐
5.1.E(9) - Zoning District, Tax Map and Lot number, and use of abutting properties within 200 feet of property.	☒	☐
5.1.E(9) - Location of roads, streets, and driveways within 200 feet of property.	☒	☐
5.1.E(10) - Proposed streets, driveways, parking spaces, and sidewalks, with indication of direction of travel, width, and inside radii of all curves.	☒	☐
5.1.E(10) - Parking spaces shall be numbered.	☒	☐
5.1.E(10) - Loading spaces and facilities used with any structures.	☒	☐
5.1.E(10) - Total square footage and percentage of lot covered by impervious surfaces.	☒	☐
5.1.E(11) - Size and location of all existing and proposed public and private utilities.	☒	☐

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(12) - Plan for outdoor lighting showing proposed location, mounting height, fixture type, lamp type and wattage of all exterior free-standing lighting or building-mounted fixtures.	☒	☐
5.1.E(12) - Analyses and illuminance-level diagrams, to include average and minimum foot-candle measurements, showing that proposed installation conforms to the lighting-level standards in Site Plan Review Regulations.	☒	☐
5.1.E(12) - Manufacturer's specification information for each proposed light fixture and lamp (NOTE: This information may be provided on the plan or as a separate attachment).	☒	☐
5.1.E(12) - Drawings of all relevant building elevations showing location and height of all building-mounted fixtures, illumination levels of walls or architectural features, and aiming points for any remote light fixtures.	☒	☐
5.1.E(13) - Plan for location of free-standing or building-mounted signs, including location, mounting, aiming, and shielding of any remote light fixtures for externally-lit signs.	☒	☐
5.1.E(13) - For internally-lit signs, relevant information concerning the method of illumination and the opacity of the sign background, showing that the proposed installation conforms to the requirements of the Regulations.	**N/A**	☐
5.1.E(14) - 100-yr flood elevation, floodway, and floodplain limits, where relevant.	☒	☐
5.1.E(15) - Landscaping plan showing proposed new plantings to be installed and existing natural vegetation to be retained. Plan shall show in detail the number, size (height and/or caliper), and species (botanical and common names) of all proposed shrubs and trees.	☒	☐
5.1.E(15) - Existing trees over 12 inches in diameter (measured 4.5 feet above ground surface) within 25 feet of the disturbed area, must be counted and shown on the plan, if included towards fulfilling landscaping requirements.	**N/A**	☐
5.1.E(15) - Calculations for square footage of perimeter landscaping.	☐	☒
5.1.E(15) - Parking lot shading calculations shall be provided by depicting new trees and shrubs at 10-year crown size.	☒	☐
5.1.E(16) - Existing and proposed surface and subsurface storm drainage facilities, including City storm drainage facilities located within 200' of site.	☒	☐
5.1.E(16) - Plans for retention, detention, slow release, and treatment of storm water shall be provided, where necessary.	☐	☒
5.1.E(16) - Drainage plans prepared by a professional engineer registered in NH, whose seal and signature shall appear on plan(s).	☐	☒
5.1.E(17) - Plans for snow removal and storage.	☒	☐
5.1.E(18) - Plans showing automobile, public transit, bicyclist, and pedestrian access and circulation, including means of access to site and any proposed changes to existing public streets or sidewalks.	☒	☐
5.1.E(18) - Any traffic control devices necessary in conjunction with site development.	☒	☐
5.1.E(18) - Location of existing transit routes and transit stops located or passing within 1/4 mile (1,320 feet) of the property.	☒	☐

Plan Requirements *(cont.)*	**Info. Provided**	**Waiver Sought**
5.1.E(19) - Construction detail drawings including, but not limited to, pavements, walks, steps, curbing, drainage structures, water and/or sewer utilities, and other site systems or structures. (NOTE: Ordinarily, only two sets of construction drawings shall be provided.)	☒	☐
5.1.E(19) - Where applicable, roadway, drainage, water and sewer utility profile drawings shall be provided at a scale of 1"=40 feet (horizontal) and 1"=4 feet (vertical) and typical cross-section drawings shall be provided at a scale of 1"=5 feet (horizontal and vertical), unless prior approval is granted by the City Engineer.	☒	☐
5.1.E(20) - Where applicable, phasing lines and schedules for construction and completion of buildings, parking facilities, landscaping, and other required improvements.	N/A	☐
5.1.E(21) - For multi-family structures, plans for on-site recreational facilities.	☐	☒
5.1.E(22) - Plans for fire protection, if the site is not connected to a City water main.	N/A	☐
Supporting Documents and Information, Where Applicable	**Info. Provided**	**Not Applicable**
5.1.G(1) - Drainage calculations and a drainage plan shall be submitted to support the drainage plan. The plan and calculations shall be prepared by a professional engineer registered in New Hampshire.	☐	☒
5.1.G(2) - An estimated timetable, to include phasing schedules, for construction and completion of buildings, parking, facilities, landscaping, and other required improvements.	☒	☐
5.1.G(3) - Any development estimated to generate a net increase of 100 peak hour trips or 1,000 average daily trips (based upon the most current edition of the ITE Trip Generation Manual) shall prepare and submit a Traffic Impact Study in accordance with standard traffic analysis conventions as set forth by the NHDOT. The Board may, in its discretion, require the submission of a Traffic Impact Study for developments estimated to generate less than 100 peak hour trips or 1,000 average daily trips if the Board has reason to believe such development could adversely affect levels of service or have other adverse impacts.	☐	☒

NOTE: THE APPLICANT IS RESPONSIBLE FOR PROVIDING THE REQUIRED INFORMATION PURSUANT TO ARTICLE V OF THE SITE PLAN REVIEW REGULATIONS. PLEASE BE AWARE THAT THIS CHECKLIST IS FOR INFORMATION AND GUIDANCE ONLY AND DOES NOT REPRESENT THE LAW DICTATING SUBMITTAL REQUIREMENTS NOR IS IT COMPLETE AND INCLUSIVE THEREOF.

Completed By: *Engineering Ventures - Nicholas A. Fiore*

Planning office Use Only:

Date Received___/___/___ Checklist Complete YES or NO Checked by:_____

(Last Revised 05/22/13)

City of Lebanon, New Hampshire
APPLICATON FOR WAIVERS

Office Use Only	Date Received: _____	File No.: _____

PROJECT INFORMATION

Name of Applicant: Tackle Partners, LLC / Meg Carlton

Project Name: 37 Spencer Street Renovations

Project Address: 37 Spencer Street, Lebanon, 03766

WAIVER REGULATIONS

In order to grant a Waiver from a requirement of the City of Lebanon Site Plan Review or Subdivision Regulations, the Planning Board must find that the Waiver is justified under one of the following criteria *(See Article VII of the Site Plan Review Regulations and Section 7.15 of the Subdivision Regulations)*:

Criteria A. Strict conformity would pose an unnecessary hardship to the Applicant and waiver would not be contrary to the spirit and intent of the regulations;

OR

Criteria B. Specific circumstances relative to the site plan, or conditions of the land in such site plan, indicate that the waiver will properly carry out the spirit and intent of the regulations.

WAIVER REQUEST(S)

I (we) hereby request a Waiver from:

[You can respond in the space provided, or attach a separate statement. Please be prepared to address each request during your public hearing. You must show that you have justified granting the Waiver(s).]

1. Section 5.1.E(7) of the (*circle one*) [Site Plan Review] / Subdivision Regulations. A Waiver of this Section meets (*circle one*) [Criteria A] / Criteria B because _____

   A waiver is sought only from providing the specific heights of all buildings within 200'; number of stories, sizes, shapes, and locations are provided. Providing accurate heights will require extensive additional research and field work. The project includes work on an existing building and with only a small increase in height. The renovated building will fit within the neighborhood as well as it does today.

2. Section 5.1.E(15) / 6.2.B of the (*circle one*) [Site Plan Review] / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / [Criteria B] because _____

   A waiver is sought from providing perimeter landscaping above what is shown on the plans. Exiting perimeter landscaping within the project's limits of disturbance consists only of small patches of grass. The project will improve the site landscaping, but required sidewalks, pedestrian and vehicular access points, and existing overhead utility lines prevent the project from meeting all of the perimeter landscaping requirements.

3. Section 5.1.E(15) / 6.2.D of the (*circle one*) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / Criteria B because _____

A waiver is sought from providing landscaping around the building above what is shown on the plans. The project will add and improve landscaping around the building, but existing and proposed pedestrian and vehicular access points prevent the project from meeting all of the perimeter landscaping requirements.

4. Section 5.1.E(16) / 6.6 of the (*circle one*) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / Criteria B because _____

A waiver is sought from providing stormwater calculations and drainage plans for this project. As shown in the Zoning Chart on sheet C0.0 of the plan set, the project will reduce the site's impervious area by 3,648 square feet which will result in a reduction of stormwater runoff.

5. Section 6.5.B.4 of the (*circle one*) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / Criteria B because _____

A waiver is sought from providing curb and sidewalk along the frontage of the property. It is the applicant's understanding that the City plans to reconstruct Spencer St in the near future. Recent similar efforts by the City have included adding and reconstructing sidewalks. Additionally the City may wish adjust the alignment of Spencer St and correct areas where the street is outside of the right-of-way. Plans are not final for the City's Spencer St project and it would be a significant waist of the applicant's resources to install curb and sidewalk just to have the City remove them.

6. Section 5.1.E(21) the (*circle one*) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / Criteria B because _____

A waiver is sought from providing on site recreational facilities for multi-family structures. The proposed residential units are all studio and 1 bedroom units. It is not anticipated that families will reside at this location and that any recreational facilities would go unused.

7. Section Zoning Ordinance 307.6, B, 1 of the (*circle one*) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / Criteria B because _____

Please see attached written statement.

8. Section Zoning Ordinance 307.8, C of the (*circle one*) Site Plan Review / Subdivision Regulations. A Waiver of this Section meets (*circle one*) Criteria A / Criteria B because _____

Please see attached written statement.

SIGNATURE

I (we) hereby submit this application to the Planning Board and attest that to the best of my (our) knowledge all of the information on this application form and in the accompanying application materials and documentation is true and accurate. As the applicant or as the agent of the applicant, I attest that I am duly authorized to act in this capacity.

Signature of Applicant: _____ Date: _____

Tackle Partners, LLC

SUPPORT STATEMENT FOR CONDITIONAL USE PERMIT: LEBANON DOWNTOWN DISTRICT:

We are largely enthusiastic and optimistic about the creation of the Lebanon Downtown District. However, the new zoning amendments pose a number of obstacles to redevelopment, and to this renovation in particular.

In our case, the number one driver of this renovation has been the FEMA rule regarding substantial development in the floodplain, requiring that all occupied spaces be raised above the Base Flood Elevation (BFE), which represents an enormous financial burden, especially with a building of this size. Failure to satisfy the FEMA conditions prevents improvement of any kind to this building, and FEMA grants no exemptions for hardship. Less intrepid souls might have scrapped the entire building and started from scratch. But repurposing requires that you play the cards you're dealt.

The Math Problem: The grade of Spencer St. is 576', the existing slab is at 578.17', the building's BFE is 579.8', and Lebanon Code requires an additional foot. The first floor level of the building is this required to be 4.8' above the grade of the street. This means that handicapped ramp access, at 1' per inch of rise, requires 57-1/2' feet of ramp, not including the intermittent "oases". We have, quite attractively, managed to provide two such ramps to the building.

Conditional Use Waiver

Because we are submitting as an amendment to an approved site plan, it is unclear whether this waiver is necessary, since that site plan covered the section of building that would be subject to the new LDD guidelines. Nevertheless, we submit the following for the Board's review.

Because this is an existing building, we did not have the same control over its size as we might if this were new construction. As the renovated building will be just over 20,000sf, under the new rubric (Section 307.6 B 1), we require a Conditional Use Permit to waive the non-residential street-level use. We have another building on the lot, 25 Spencer, with principal frontage on the secondary street. It is further back from the street by 5', but closer to the downtown core. We believe it would satisfy the intent, as it is expected to retain its non-residential use.

We would also point out that the improvements to the streetscape at 37 are far more attractive in a residential application. We have removed the parking from the

front of the building, incorporated charming front porches, landscaping, and sidewalks. While the non-residential use square footage could be accommodated, it will require an *additional* handicapped ramp, eliminating all of the streetscape gains. An alternative, having the area of non-residential use accessed through the lobby of the building, poses an unacceptable security risk to our residents.

We are confident that the proposed building meets the approval standards for a conditional use permit outlined in Section 302.4 D.

LIGHTOLIER
by signify

Downlighting

SlimSurface LED

S5R, S7R & S10R Round 5", 7" and 10" Apertures

TYPE A

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

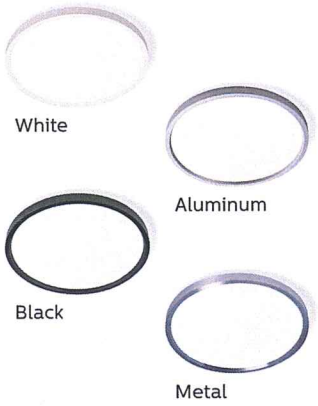
SlimSurface is a 5/8" thick LED surface mounted luminaire with the appearance of a recessed downlight. Easy to install into most standard j-boxes, the SlimSurface round apertures are available as a 5" 650lm, 7" 1000lm and 10" 2200lm fixture.

Ordering guide

example: S5R830K7AL

Series	CRI	CCT	Lumens	Finish	Dimming
S5R SlimSurface 5" Round	**8** 80 **9** 90[1]	**27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K	**7** 650lm	— White **AL** Aluminum **BK** Black	**blank** ELV / Triac (120V)
				W White **AL** Aluminum **BK** Black	**Z10U** 0-10V (120V-277V)
S7R SlimSurface 7" Round	**8** 80 **9** 90[1]	**27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K	**10** 1000lm	— White **AL** Aluminum **BK** Black	**blank** ELV / Triac (120V)
				W White **AL** Aluminum **BK** Black	**Z10U** 0-10V (120V-277V)
S10R SlimSurface 10" Round[2]	**8** 80 **9** 90[1]	**27K** 2700K **30K** 3000K **35K** 3500K **40K** 4000K	**22** 2200lm	**W** White **AL** Aluminum **BK** Black **MT** Metallic	**blank** ELV / Triac (120V) **Z10U** 0-10V (120V-277V)

1. Configurations using 90 CRI are only available with 2700K & 3000K CCT.
2. SlimSurface LED 10" round installs into 4-11/16" J-box (not wet location listed).



Features

1. **Flange:** One piece plastic flange. Injection molded white, applied aluminum or black.
2. **Lens:** High transmittance lens allowing for smooth, comfortable light pattern.
3. **Power supply:** Integral class 2 driver. Factory wired electronic LED driver (see Electrical section for specifications)
4. **LED Strip:** Utilizes LEDs.
5. Lifetime: Expected lifetime 50,000 hours and backed by a 5-year warranty*
6. **Compliance:** Non-conductive fixture for shower light application (not applicable to metal trim model).

Dimming

Intended for ELV/Triac (120V) or 0-10V dimming (120V-277V) based on the configuration. Min 90°C supply conductors.

Electrical

Electronic power supply: RoHS compliant. Class 2 power unit. Unit tolerates sustained open and short circuit output conditions without damage.

Labels

cULus listed. ENERGY STAR® certified. All models are damp location rated for walls or ceilings. The 5" & 7" are suitable for ceiling mount wet locations when installed per instructions.

Electrical specifications	Dimming	Input volts	Input frequency	Input current	Input Power	THD Factor	Power Factor	Minimum Operating Temp.
Slim 5" 650lm	Triac	120V	50/60Hz	0.08A	9.5W	<15%	>0.9	-20°C
	0-10V	120V	50/60Hz	0.09A	10.1W	<20%	>0.9	-20°C
		277V	50/60Hz	0.04A	10.2W	<20%	>0.9	-20°C
Slim 7" 1000lm	Triac	120V	50/60Hz	0.13A	14.2W	<15%	>0.9	-20°C
	0-10V	120V	50/60Hz	0.12A	14.4W	<20%	>0.9	-20°C
		277V	50/60Hz	0.06A	14.7W	<20%	>0.9	-20°C
Slim 10" 2200lm	Triac	120V	50/60Hz	0.20A	23.2W	<20%	>0.9	-20°C
	0-10V	120V	50/60Hz	0.20A	23.2W	<10%	>0.95	-20°C
		277V	50/60Hz	0.09A	24.6W	<15%	>0.95	-20°C

Fore more details, please see LED-DIM-DL spec sheet.
* See Philips.com/warranties for warranty details.

c UL us LISTED

ENERGY STAR

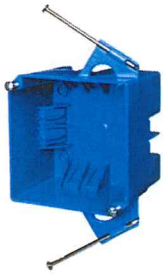
S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

Compatibility

Installs into standard J-box applications for 5" & 7" models (for 10" model fixture install into 4-11/16" J-box):

3½" round (plastic)



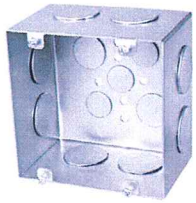
4" square (plastic)

Not compatible with S5R

4" octagonal (metal)

4" square (metal)

Not compatible with S5R



4 11/16" square (metal)

Compatible with S10R only

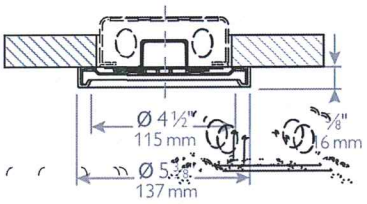
Fire rated J-box

Fire rated classification is per the ceiling and junction box ratings.

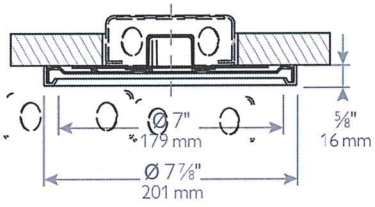
Note: A 2 1/8" deep octagon junction box is recommended for through circuit wiring applications.

Dimensions

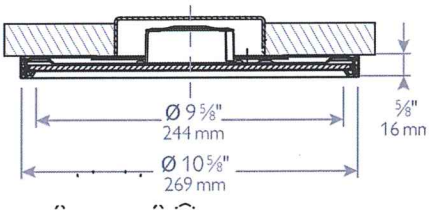
SlimSurface LED 5" downlight

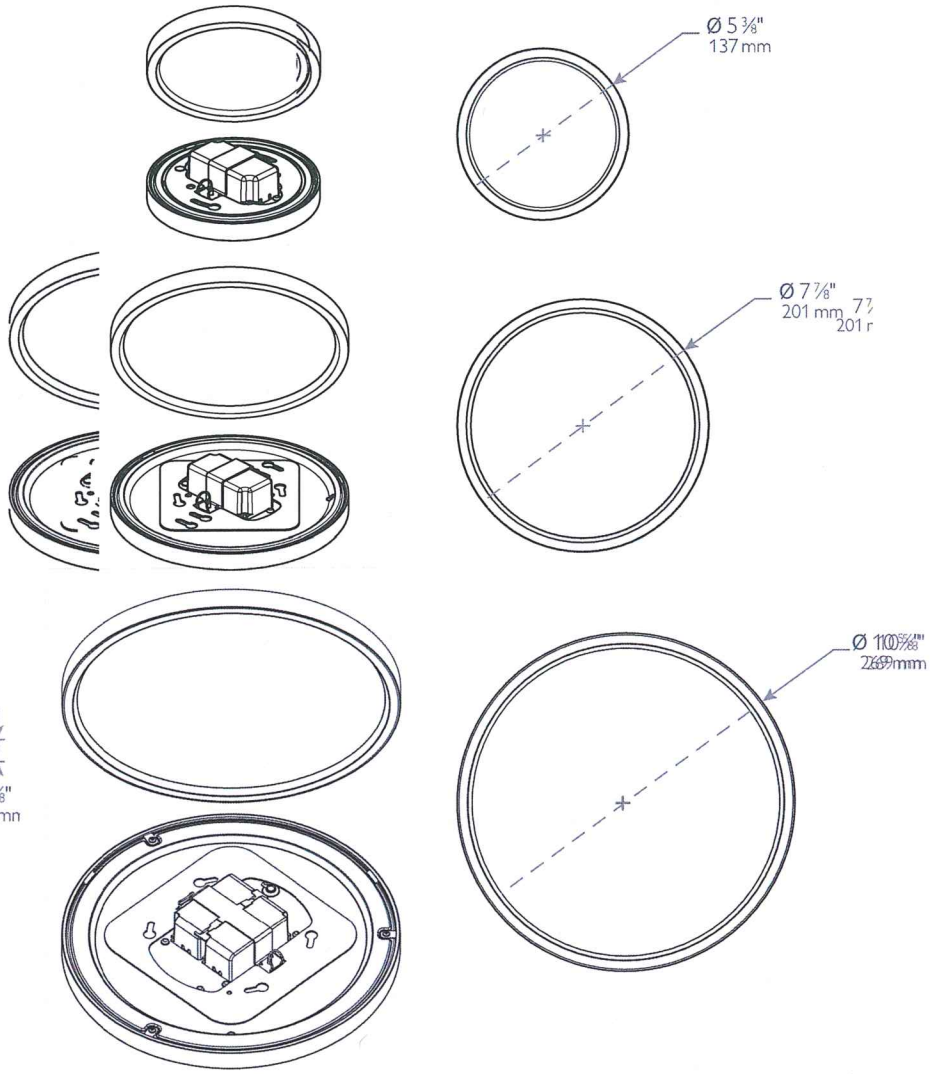


SlimSurface LED 7" downlight



SlimSurface LED 10" downlight



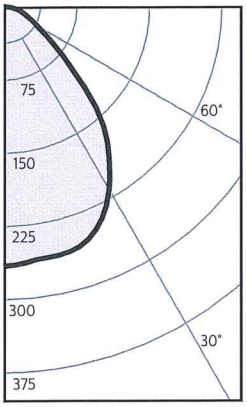


S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S5R927K7 • 10W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	266	
5	263	25
10	261	
15	260	736
20	254	
25	239	110
30	217	
35	190	118
40	160	
45	118	91
50	81	
55	55	51
60	40	
65	30	31
70	23	
75	18	18
80	11	
85	4	5
90	0	

Report[1]: 1053GFR

Output lumens:	523lms	Efficacy:	57.4lm/w
Spacing Criterion:	1.2	CCT[3]:	2700K
Beam Angle:	87°	CRI:	90min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	11	6.0'
6'	7	7.2'
7'	5	8.4'
8'	4	9.6'
9'	3	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	21.8	0.40
6'	14.2	0.26
7'	10.2	0.19
8'	8.5	0.16
9'	6.8	0.13

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	64	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	54	47	42	54	41	53	41	51	41	39
9	63	50	43	38	50	38	49	38	48	37	36
10	59	47	40	35	46	35	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

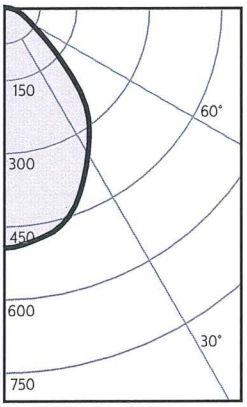
Zone	Lumens	%Luminaire
0-30	208	39.8%
0-40	326	62.5%
0-60	469	89.7%
0-90	522	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R927K10 • 14W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	496	
5	490	46
10	479	
15	464	130
20	433	
25	391	180
30	348	
35	309	193
40	265	
45	197	152
50	135	
55	92	85
60	68	
65	51	52
70	40	
75	30	32
80	21	
85	9	10
90	0	

Report[1]: 962GFR

Output lumens:	880lms	Efficacy:	65.2lm/w
Spacing Criterion:	1.1	CCT[3]:	2700K
Beam Angle:	83°	CRI:	90min
Input Watts[2]:	13.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	20	5.5'
6'	14	6.6'
7'	10	7.7'
8'	8	8.8'
9'	6	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	21.8	2.89
6'	14.2	1.90
7'	10.2	1.35
8'	8.5	1.13
9'	6.8	0.90

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	356	40.5%
0-40	549	62.4%
0-60	786	89.3%
0-90	880	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

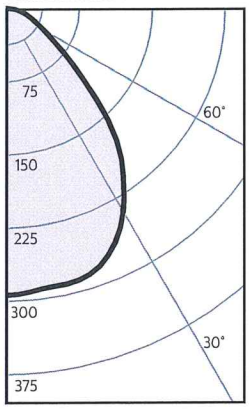
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S5R827K7 • 10W LED, 80CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	294	
5	291	28
10	289	
15	288	81
20	281	
25	265	121
30	241	
35	211	131
40	178	
45	131	102
50	91	
55	62	57
60	45	
65	34	34
70	26	
75	20	21
80	13	
85	4	5
90	0	

Report[1]: 1054GFR

Output lumens:	581 lms	Efficacy:	62.5 lm/w
Spacing Criterion:	1.2	CCT[3]:	2700K
Beam Angle:	87°	CRI:	80 min
Input Watts[2]:	9.3W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	12	6.0'
6'	8	7.2'
7'	6	8.4'
8'	5	9.6'
9'	4	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	24.2	2.77
6'	15.8	1.82
7'	11.3	1.30
8'	9.5	1.08
9'	7.5	0.87

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	105	100	95	97	92	88
2	102	96	90	85	94	94	90	82	87	80	77
3	95	86	79	73	84	84	82	72	79	70	67
4	88	78	70	64	76	76	74	63	72	62	60
5	82	71	63	57	70	70	68	56	66	56	53
6	76	64	57	51	64	64	62	50	60	50	48
7	71	59	51	46	58	58	57	45	56	45	43
8	67	54	47	42	54	54	53	41	51	41	39
9	63	50	43	38	50	50	49	38	48	37	36
10	59	47	40	35	46	46	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

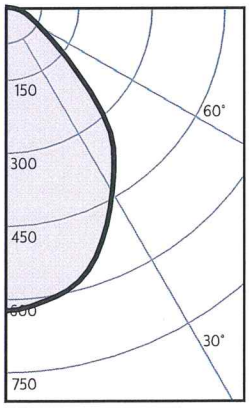
Zone	Lumens	%Luminaire
0-30	231	39.7%
0-40	362	62.3%
0-60	521	89.6%
0-90	581	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R827K10 • 14W LED, 80CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	625	
5	618	59
10	604	
15	584	164
20	546	
25	494	227
30	440	
35	390	244
40	337	
45	250	193
50	170	
55	117	108
60	85	
65	65	65
70	51	
75	39	41
80	27	
85	12	13
90	0	

Report[1]: 964GFR

Output lumens:	1113 lms	Efficacy:	83.1 lm/w
Spacing Criterion:	1.1	CCT[3]:	2700K
Beam Angle:	83°	CRI:	80 min
Input Watts[2]:	13.4W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	25	5.5'
6'	17	6.6'
7'	13	7.7'
8'	10	8.8'
9'	8	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	24.2	3.68
6'	15.8	2.42
7'	11.3	1.73
8'	9.5	1.44
9'	7.5	1.15

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	449	40.4%
0-40	693	62.3%
0-60	994	89.3%
0-90	1113	100.0%

CRI and CCT adjustment factors

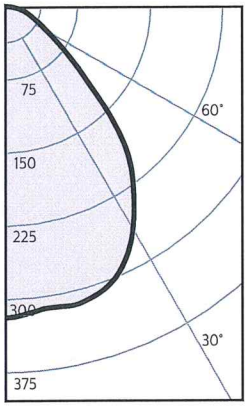
90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S5R830K7 • 10W LED, 80CRI, 3000K

Candela Curves



Angle	Mean CP	Lumens
0	319	
5	315	30
10	313	
15	313	88
20	306	
25	290	131
30	264	
35	231	142
40	197	
45	146	109
50	100	
55	69	62
60	50	
65	38	37
70	29	
75	22	22
80	15	
85	6	6
90	0	

Report[1]: 1055GFR

Output lumens:	628lms	Efficacy:	69.0lm/w
Spacing Criterion:	1.2	CCT[3]:	3000K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	13	6.0'
6'	9	7.2'
7'	7	8.4'
8'	5	9.6'
9'	4	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	26.2	3.06
6'	17.1	2.01
7'	12.2	1.43
8'	10.2	1.19
9'	8.1	0.96

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	64	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	54	47	42	54	41	53	41	51	41	39
9	63	50	43	38	50	38	49	38	48	37	36
10	59	47	40	35	46	35	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

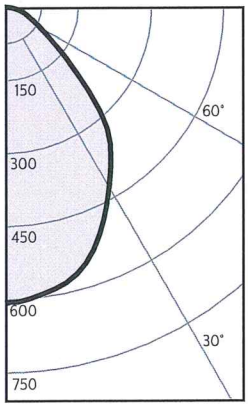
Zone	Lumens	%Luminaire
0-30	249	39.7%
0-40	391	62.3%
0-60	562	89.6%
0-90	628	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R830K10 • 14W LED , 80CRI, 3000K

Candela Curves



Angle	Mean CP	Lumens
0	607	
5	601	57
10	588	
15	568	159
20	531	
25	480	221
30	427	
35	379	237
40	328	
45	243	187
50	165	
55	113	105
60	83	
65	63	63
70	49	
75	37	39
80	26	
85	12	13
90	0	

Report[1]: 961GFR

Output lumens:	1081lms	Efficacy:	80.0lm/w
Spacing Criterion:	1.1	CCT[3]:	3000K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	24	5.5'
6'	17	6.6'
7'	12	7.7'
8'	9	8.8'
9'	7	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	26.2	3.55
6'	17.1	2.33
7'	12.2	1.66
8'	10.2	1.39
9'	8.1	1.11

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	437	40.4%
0-40	674	62.3%
0-60	966	89.4%
0-90	1081	100.0%

CRI and CCT adjustment factors

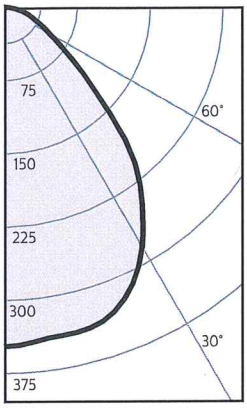
90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S5R835K7 • 10W LED, 80CRI, 3500K

Candela Curves



Angle	Mean CP	Lumens
0	347	
5	344	33
10	341	
15	340	96
20	332	
25	312	143
30	283	
35	248	155
40	209	
45	154	119
50	107	
55	74	68
60	53	
65	41	41
70	31	
75	23	25
80	15	
85	5	7
90	0	

Report[1]: 1056GFR

Output lumens:	685lms	Efficacy:	75.3lm/w
Spacing Criterion:	1.2	CCT[3]:	3500K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	14	6.0'
6'	10	7.2'
7'	7	8.4'
8'	5	9.6'
9'	4	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	28.6	3.34
6'	18.7	2.19
7'	13.3	1.56
8'	11.2	1.30
9'	8.9	1.04

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	111	106	100
1	111	107	103	100	105	98	100	95	95	92	88
2	102	96	90	85	94	84	90	82	82	80	77
3	95	86	79	73	84	73	82	72	72	70	67
4	88	78	70	64	76	64	74	63	63	62	60
5	82	71	63	57	70	57	68	56	56	56	53
6	76	64	57	51	64	51	62	50	50	50	48
7	71	59	51	46	58	46	57	45	45	45	43
8	67	54	47	42	54	41	53	41	41	41	39
9	63	50	43	38	50	38	49	38	38	37	36
10	59	47	40	35	46	35	45	34	34	34	33

Room Cavity Ratio

Zonal lumens & percentages

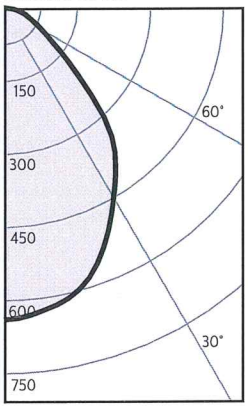
Zone	Lumens	%Luminaire
0-30	272	39.6%
0-40	426	62.2%
0-60	613	89.5%
0-90	685	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R835K10 • 14W LED, 80CRI, 3500K

Candela Curves



Angle	Mean CP	Lumens
0	639	
5	632	60
10	618	
15	597	167
20	558	
25	505	232
30	449	
35	399	249
40	345	
45	255	197
50	174	
55	120	111
60	88	
65	67	67
70	52	
75	40	42
80	28	
85	12	13
90	0	

Report[1]: 965GFR

Output lumens:	1139lms	Efficacy:	84.4lm/w
Spacing Criterion:	1.1	CCT[3]:	3500K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	26	5.5'
6'	18	6.6'
7'	13	7.7'
8'	10	8.8'
9'	8	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	28.6	3.74
6'	18.7	2.45
7'	13.3	1.75
8'	11.2	1.46
9'	8.9	1.17

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	459	40.3%
0-40	708	62.2%
0-60	1016	89.2%
0-90	1139	100.0%

CRI and CCT adjustment factors

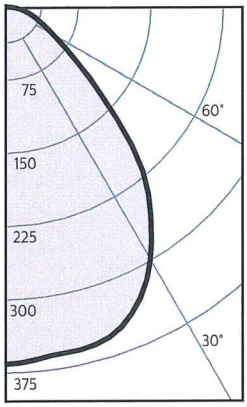
90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S5R840K7 • 10W LED, 80CRI, 4000K

Candela Curves



Angle	Mean CP	Lumens
0	366	
5	363	35
10	360	
15	359	101
20	350	
25	329	151
30	299	
35	262	163
40	221	
45	163	126
50	113	
55	79	72
60	57	
65	44	44
70	34	
75	25	27
80	16	
85	6	7
90	0	

Report[1]: 1057GFR

Output lumens:	726lms	Efficacy:	79.8lm/w
Spacing Criterion:	1.2	CCT[3]:	4000K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	9.1W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	15	6.0'
6'	10	7.2'
7'	7	8.4'
8'	6	9.6'
9'	5	10.8'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	30.3	3.54
6'	19.8	2.32
7'	14.1	1.66
8'	11.8	1.38
9'	9.4	1.10

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	73	84	73	82	72	79	70	67
4	88	78	70	64	76	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	64	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	54	47	42	54	41	53	41	51	41	39
9	63	50	43	38	50	38	49	38	48	37	36
10	59	47	40	35	46	35	45	34	44	34	33

Room Cavity Ratio

Zonal lumens & percentages

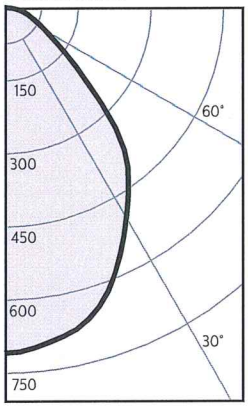
Zone	Lumens	%Luminaire
0-30	286	39.5%
0-40	450	62.0%
0-60	648	89.3%
0-90	726	100.0%

CRI and CCT adjustment factors

90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S7R840K10 • 14W LED, 90CRI, 2700K

Candela Curves



Angle	Mean CP	Lumens
0	710	
5	702	66
10	686	
15	663	186
20	620	
25	560	258
30	499	
35	443	276
40	382	
45	283	218
50	193	
55	133	122
60	97	
65	74	74
70	57	
75	44	46
80	30	
85	14	15
90	0	

Report[1]: 963GFR

Output lumens:	1262lms	Efficacy:	94.2lm/w
Spacing Criterion:	1.1	CCT[3]:	4000K
Beam Angle:	83°	CRI:	80min
Input Watts[2]:	13.4W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	28	5.5'
6'	20	6.6'
7'	14	7.7'
8'	11	8.8'
9'	9	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	30.3	4.17
6'	19.8	2.74
7'	14.1	1.96
8'	11.8	1.63
9'	9.4	1.30

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	71	67
4	88	78	70	65	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	51	61	50	48
7	71	59	52	46	59	46	57	46	56	45	43
8	67	55	47	42	54	42	53	42	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	47	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	510	40.4%
0-40	786	62.3%
0-60	1127	89.3%
0-90	1262	100.0%

CRI and CCT adjustment factors

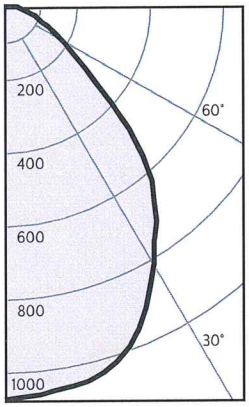
90 CRI 2700K = 84%
80 CRI 2700K = 100%
80 CRI 3000K = 100%
80 CRI 3500K = 105%
80 CRI 4000K = 109%

S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S10R830K22 • 24W LED, 80CRI, 3000K

Candela Curves



Angle	Mean CP	Lumens
0	1027	
5	1017	97
10	1008	
15	992	279
20	947	
25	871	399
30	776	
35	685	429
40	597	
45	459	351
50	313	
55	223	204
60	161	
65	122	122
70	93	
75	70	74
80	46	
85	20	23
90	0	

Report[1]: S10R927K22BK

Output lumens:	1977lms	Efficacy:	84.1lm/w
Spacing Criterion:	1.1	CCT[3]:	3000K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	23.5W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	41	5.5'
6'	29	6.6'
7'	21	7.7'
8'	16	8.8'
9'	13	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	83.4	1.04
6'	54.8	0.68
7'	39.1	0.49
8'	32.6	0.41
9'	26.1	0.33

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	95	90	85	93	84	90	82	87	80	76
3	95	86	79	73	84	72	81	71	79	70	67
4	88	77	70	64	76	63	74	63	71	62	59
5	82	70	62	56	69	56	67	56	65	55	53
6	76	64	56	50	63	50	61	50	60	49	47
7	71	59	51	45	58	45	57	45	55	45	43
8	66	54	46	41	53	41	52	41	51	41	39
9	62	50	43	37	49	37	48	37	47	37	35
10	59	47	39	34	46	34	45	34	44	34	32

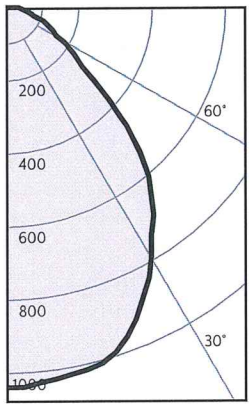
Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	775	39.2%
0-40	1203	60.9%
0-60	1758	88.9%
0-90	1977	100.0%

S10R835K22 • 24W LED, 80CRI, 3500K

Candela Curves



Angle	Mean CP	Lumens
0	1000	
5	990	94
10	981	
15	966	271
20	922	
25	847	388
30	754	
35	664	416
40	579	
45	442	339
50	300	
55	212	195
60	153	
65	117	117
70	89	
75	67	71
80	44	
85	20	22
90	0	

Report[1]: 963GFR

Output lumens:	1913lms	Efficacy:	80.0lm/w
Spacing Criterion:	1.1	CCT[3]:	3500K
Beam Angle:	87°	CRI:	80min
Input Watts[2]:	23.9W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	40	5.5'
6'	28	6.6'
7'	20	7.7'
8'	16	8.8'
9'	12	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	80.8	1.06
6'	53.0	0.70
7'	37.9	0.50
8'	31.6	0.41
9'	25.2	0.33

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	104	98	100	95	96	92	88
2	102	95	90	85	94	84	90	82	87	80	76
3	95	86	79	73	84	72	81	71	79	70	67
4	88	77	70	64	76	64	74	63	72	62	59
5	82	70	62	57	69	56	67	56	65	55	53
6	76	64	56	51	63	50	62	50	60	50	47
7	71	59	51	45	58	45	57	45	55	45	43
8	67	54	47	41	54	41	52	41	51	41	39
9	62	50	43	38	50	38	49	37	48	37	35
10	59	47	39	35	46	34	45	34	44	34	32

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	754	39.4%
0-40	1170	61.2%
0-60	1703	89.0%
0-90	1913	100.0%

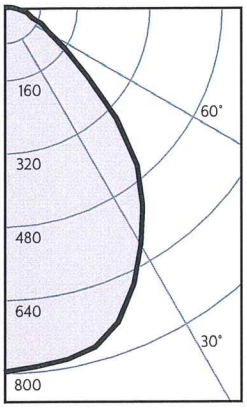
1. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.
2. Wattage: controlled to within 5%
3. Correlated Color Temperature: within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

S5R, S7R & S10R SlimSurface LED

Round 5", 7" and 10" Apertures

S10R927K22 • 23W LED, 90 CRI, 2700 K

Candela Curves



Angle	Mean CP	Lumens
0	794	
5	788	75
10	781	
15	769	216
20	732	
25	669	307
30	595	
35	525	328
40	453	
45	344	265
50	238	
55	162	149
60	116	
65	87	87
70	66	
75	49	52
80	32	
85	13	15
90	0	

Report[1]: S10R927K22BK

Output lumens:	1493 lms	Efficacy:	65.5 lm/w
Spacing Criterion:	1.1	CCT[3]:	2700 K
Beam Angle:	86°	CRI:	90 min
Input Watts[2]:	22.8 W		

Single unit data

Height to Lighted Plane	Initial center beam foot-candles	Beam dia. (ft)*
5'	32	5.5'
6'	22	6.6'
7'	16	7.7'
8'	12	8.8'
9'	10	9.9'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

Spacing on center	Initial center beam foot-candles	Watts per sq.ft.
5'	63.3	1.01
6'	41.5	0.66
7'	29.7	0.47
8'	24.7	0.39
9'	19.8	0.32

38'x38'x10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	111	107	103	100	105	98	100	95	97	93	88
2	103	96	90	85	94	84	90	82	87	80	77
3	95	86	79	74	85	73	82	72	79	70	67
4	88	78	70	64	77	64	74	63	72	62	60
5	82	71	63	57	70	57	68	56	66	56	53
6	76	65	57	51	64	51	62	50	60	50	48
7	71	59	51	46	58	46	57	45	56	45	43
8	67	55	47	42	54	42	53	41	52	41	39
9	63	51	43	38	50	38	49	38	48	38	36
10	59	47	40	35	46	35	46	35	45	35	33

Room Cavity Ratio

Zonal lumens & percentages

Zone	Lumens	%Luminaire
0-30	598	40.0%
0-40	925	62.0%
0-60	1339	89.7%
0-90	1493	100.0%

Signify North America Corporation
200 Franklin Square Drive,
Somerset, NJ 08873
Telephone 855-486-2216

Signify Canada Ltd.
281 Hillmount Road,
Markham, ON, Canada L6C 2S3
Telephone 800-668-9008

www.lightolier.com

GARDCO by signify

Wall Mount

LED Wall Sconce

121

TYPE B1, B2

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

Gardco LED wall sconce 121 offers distinction through its styling, powerful optical design, array of distributions, and impressive selection of control possibilities. Designed to add an element of style to your application by pairing straight lines with rounded edges, the form of the 121 is timeless, yet contemporary, and will complement a wide assortment of architectural styles and designs, while delivering high light levels and functional distributions. 121 sconces are available in Type 2, 3, and 4 distributions, and provide output of up to 10,103 lumens. Energy saving control options help to increase energy savings and offer California Title 24 compliance. Emergency Battery Backup option available for path-of-egress and is integral to the luminaire.

Ordering guide

example: 121-32L-700-NW-G3-3-120-IMRI2-BZ

Prefix	Number of LEDs	Drive Current	LED Color - Generation	Distribution	Emergency	Voltage	Options: Controls	Options: Electrical	Finish
121									
121 LED wall sconce	**16L** 16 LEDs (1 modules)	**530** 530mA **650** 650mA[1] **700** 700mA **1000** 1000mA **1200** 1200mA[2]	**CW-G3** Cool White 5700K, 70 CRI Generation 3 **NW-G3** Neutral White 4000K, 70 CRI Generation 3 **WW-G3** Warm White 3000K, 70 CRI Generation 3	**2** Type 2 **3** Type 3 **4** Type 4	**EBPC** Emergency Battery Pack Cold Weather[3,4,9] Leave blank to omit an emergency option	**UNV** 120-277V **HVU** 347-480V **120** 120V **208** 208V **240** 240V **277** 277V **347** 347V **480** 480V	**DD** 0-10V Dimming Driver[5] **DCC** Dual Circuit Control[6,7,8] **DynaDimmer:** Automatic Profile Dimming **CS50** Safety 50% Dimming[5,6] **CM50** Median 50% Dimming[5,6] **CE50** Economy 50% Dimming[5,6] **DA50** All Night 50% Dimming[5,6] **Photoelectric systems** **PCB** Photocontrol Button[9,10,11] **Infrared Motion Response systems** **IMRI2** Integral with #2 lens[5,6] **IMRI3** Integral with #3 lens[5,6] **Network system (SiteWise)** **SW** SW Integral module[3,12] **Wireless system (luminaire mounted)** **LLC2** Module with #2 lens[5,6] **LLC3** Module with #3 lens[5,6]	**Fusing** **F1** Single (120, 277, 347VAC)[10] **F2** Double (208, 240, 480VAC)[10] **F3** Canadian Double Pull (208, 240, 480VAC)[10]	**Textured** **BK** Black **WH** White **BZ** Bronze **DGY** Dark Gray **MGY** Medium Gray **Customer specified** **RAL** Specify optional color or RAL (ex: OC-LGP or OC-RAL7024) **CC** Custom color (Must supply color chip for required factory quote)
	32L 32 LEDs (2 modules)	**530** 530mA **650** 650mA[1] **700** 700mA **1000** 1000mA							

1. Only available with **EBPC**
2. Only available with **16** LEDs
3. Available in **120V** or **277V** only
4. **EBPC** available only in **530mA** or **650mA**
5. Not available with **1.2A** drive current
6. Available in **120V** thru **277V** and **UNV** only.
7. **DCC** available only in **530mA** with **32** LED
8. Not available with **EBPC**
9. Not available with **DCC**
10. Voltage must be specified
11. Not available in **480V**
12. **SW** option is not available with any other control options with the exception of **IMRI2**, **IMRI3** motion response options

121 LED wall sconce

Wall Mount

Luminaire Accessories (order separately)

Mounting Accessories
Wall Mount
WS Wall Mounted Box for Surface Conduit

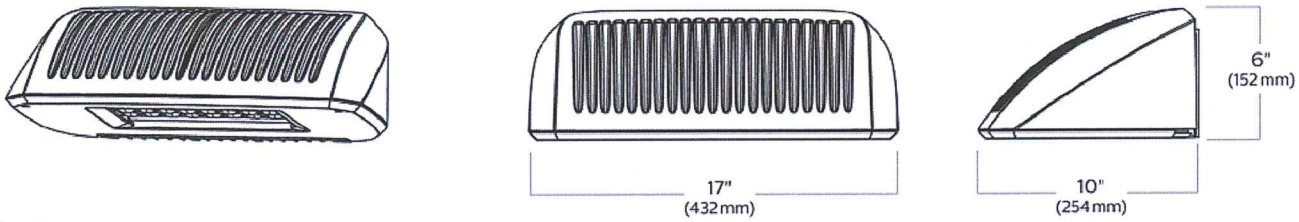
System accessories
Wireless system remote mount module
LLCR2-(F) #2 lens - specify finish in place of (F)
LLCR3-(F) #3 lens - specify finish in place of (F)
Central Remote Motion Response (used connected to SiteWise main panel)
MS2-A-FVR-3
MS2-A-FVR-7

Wireless system remote controller accessory

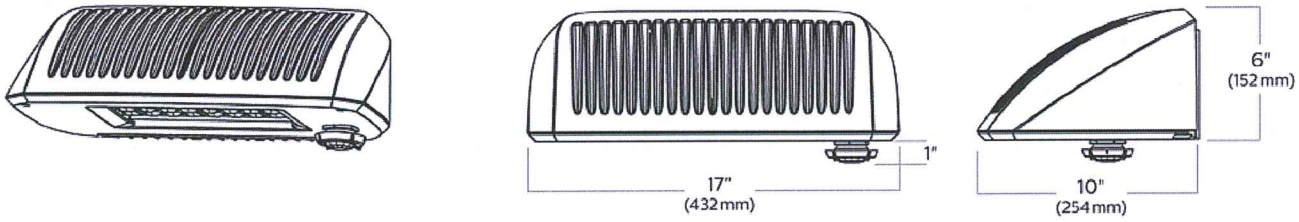
Wireless system offers a remote radio/sensor module that allows to connected to a Limelight system (sold by other). Remote module can be mounted to wall or pole with j-box supplied. May be specified by choosing one of two different lenses to accommodate a variety of mounting heights/sensor detection ranges. Must specify option DD on luminaires that are planned to be used with remote mount controllers. See page 4 for Wireless system details.

Dimensions

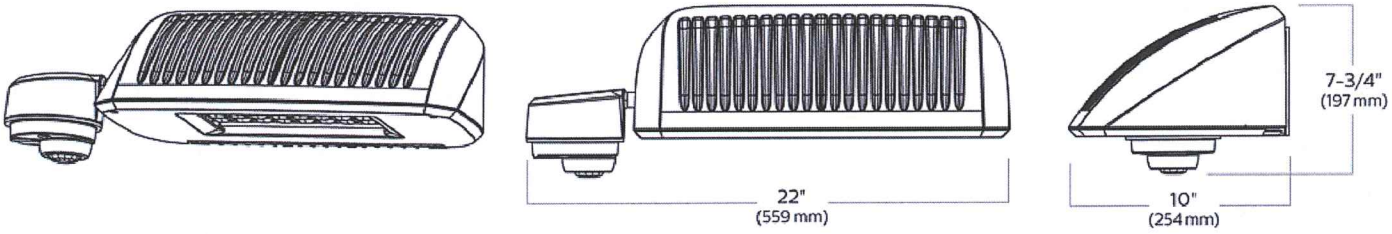
Standard Luminaire



Motion Response



Wireless Controls



Luminaire Weights	
LED wall sconce 121	**Weight**
Luminaire	15.0 lbs
Luminaire - EBPC (EM battery pack)	18.5 lbs
Luminaire - Integrated system controls	17.0 lbs

121 LED wall sconce

Wall Mount

LED Wattage and Lumen Values

Ordering Code	LED Qty	LED Current (mA)	Color Temp.[1]	Average System Watts[2]	Type 2 Lumen Output[2,3]	Type 2 BUG Rating	Type 2 Efficacy (LPW)	Type 3 Lumen Output[2,3]	Type 3 BUG Rating	Type 3 Efficacy (LPW)	Type 4 Lumen Output[2,3]	Type 4 BUG Rating	Type 4 Efficacy (LPW)
121-16L-530-NW-G3	16	530	4000K	28	2818	B1-U0-G0	100	2607	B1-U0-G1	93	2614	B1-U0-G1	93
121-16L-700-NW-G3	16	700	4000K	38	3698	B1-U0-G1	96	3421	B1-U0-G1	89	3430	B1-U0-G1	89
121-16L-1000-NW-G3	16	1000	4000K	55	4802	B1-U0-G1	88	4442	B1-U0-G1	81	4454	B1-U0-G1	81
121-16L-1200-NW-G3	16	1200	4000K	66	5364	B2-U0-G1	82	4962	B1-U0-G1	76	4975	B1-U0-G2	76
121-32L-530-NW-G3	32	530	4000K	52	5921	B2-U0-G1	114	5477	B1-U0-G2	105	5491	B1-U0-G2	106
121-32L-700-NW-G3	32	700	4000K	70	7534	B2-U0-G1	107	6969	B1-U0-G2	99	6988	B1-U0-G2	100
121-32L-1000-NW-G3	32	1000	4000K	107	10103	B2-U0-G1	95	9346	B2-U0-G2	88	9371	B2-U0-G2	88

LED Wattage and Lumen Values (Emergency Mode)[4]

Ordering Code	LED Qty	LED Current (mA)	Color Temp.[1]	Avg. System Watts Normal Mode	Avg. System Watts Emergency Mode	Lumen Outputs Type 2 Normal Mode	Lumen Outputs Type 2 Emergency Mode	Lumen Outputs Type 3 Normal Mode	Lumen Outputs Type 3 Emergency Mode	Lumen Outputs Type 4 Normal Mode	Lumen Outputs Type 4 Emergency Mode
121-16L-530-NW-G3-EBPC	16	530	4000K	28	14	2818	1353	2607	1252	2614	1255
121-16L-650-NW-G3-EBPC	16	650	4000K	37	14	3510	1353	3248	1252	3256	1255
121-32L-530-NW-G3-EBPC	32	265	4000K	28	14	2808	1764	2597	1632	2604	1636
121-32L-650-NW-G3-EBPC	32	325	4000K	32	14	3497	1764	3235	1632	3244	1636

1. Contact outdoorlighting.applications@signify.com for details on cool or warm white color temperatures.
2. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
3. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
4. For emergency EBPC option, publish values are based on initial lumens.

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50/CE50) offer safety, median, or economy settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. DA50 offers 50% instantaneous dimming all night (during all dark hours). Other dimming settings are also available if different light levels are required (contact Technical Support for details).

Profile	Dimming Schedule	Dimming Duration	Dimming Level
Economy	9 PM - 6 AM	9 hours	50%
Median	10 PM - 6 AM	8 hours	50%
Safety	11 PM - 6 AM	7 hours	50%
Reactive 50	all night	dynamic	

IMRI2, IMRI3: Infrared Motion Response Integral (IMRI). IMRI module is mounted integral to the luminaire door and is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges (see charts for approximate detection patterns). Motion response used in combination of Dynadimmer and SiteWise are not programmable and used to override controllers schedule when motion is detected. When used not combined with any controller, IMRI is set/operates in the following fashion: The motion sensor is set to a constant 50%. When motion is detected by the PIR sensor, the luminaire returns to 100% light output. Dimming on low is factory set to 50% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 50% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected. Passive infrared (PIR) motion sensor, WattStopper FSP-211, equipped with lens choice specified. Available from 120V to 277V input only. Motion sensor off state power is 0.0 watts. The FSP-211 can also be reprogrammed with WattStopper's FS1R-100 remote programming tool accessory.

DCC: Dual Circuit Control permits separate switching of 32L models only, where a quantity of (2) 16 LED modules are controlled independently by use of two sets of leads, one for each module.

SW

SiteWise option is a fully integrated controller that connects to SiteWise system in order to offer a complete area lighting management system. The communication signal is based on patented central dimming technology. SiteWise delivers it deliver optimal energy savings using your site's existing cabling. No additional wiring required, installation and commissioning are simple. An intuitive, mobile app makes it easy for authorized users to set schedules to meet site specific lighting needs, local regulations, and energy codes.

Wireless system

121 luminaires are available with optional wireless controllers ready to be connected to a Limelight system (sold by other). The system allows you to Wirelessly manage the entire site, independent lighting groups or individual luminaires while on-site or remotely.
Based on a high density mesh network with an easy to use web-based portal, you can conveniently access, monitor and manage your lighting network remotely. Wireless System can be combined with site and area, pedestrian, and parking garage luminaires as well, for a completely connected outdoor solution.

Wall Mount

Luminaire options (continued)

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

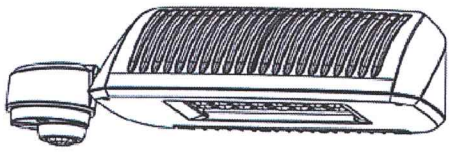
F3: Fusing Canadian Double Pull (for 208, 240 or 480VAC)

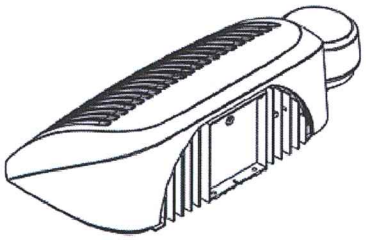
EBPC: Emergency battery pack is cold weather rated down to -20C (-4F) and integral to the luminaire , allowing for a consistent look between emergency and non-emergency sconces. A separate surface mount accessory box is not required. Dual light engines (32L) are wired in parallel, both operating in emergency mode to meet various redundancy lamp requirements. Also available with single light engine (16L). Secondary driver with relay immediately detects AC power loss and powers luminaire for a minimum of 90 minutes from the time power is lost.

Infrared Motion Response and Wireless system sensor coverage patterns

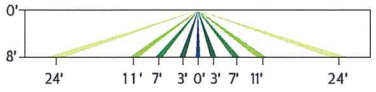
LLC2/3 Luminaire Mounted Controller

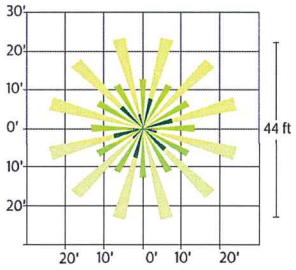
Controller attached to luminaire and Includes radio, photocell and motion sensor with #2 or #3 lens for 8-20' mounting heights.



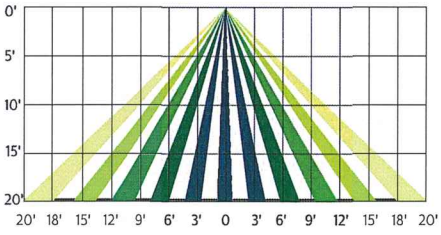


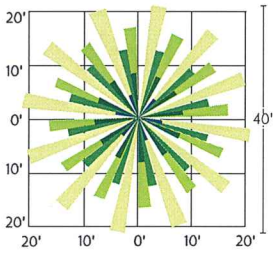
IMRI2/LLC2/LLCR2





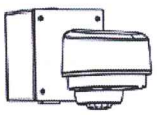
IMRI3/LLC3/LLCR3



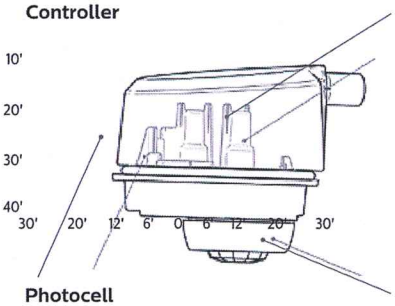


Remote Mount Wireless Controller

Used to extend the communication on site, to extend motion response and add other luminaires that are not pole mounted. Consult factory for more information.



Controller



Photocell

- Ambient light photocell on every wireless radio that averages the light levels of up to 5 controllers for an accurate reading and optimal light harvesting activity.
- Reports ambient light readings to 1500 Fc.

Wireless Radio

- 1.8 Watts max (no load draw)
- Operating voltage 120-277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- ROHS Compliant

Motion Response

- Detects motion through passive infrared sensing technology with three different lens configurations
- Motion sensor coverage can be adjusted from a narrow to a wide detection range, which helps reduce false triggers to further increase energy savings.
- Sensing profiles can be updated to adapt to activity levels in the environment, such as occupancy level, wind, and mounting height

121 LED wall sconce

Wall Mount

SiteWise system

SiteWise is a complete area lighting management system including a luminaire integrated controller, dimming signal transmitter cabinet, and locally accessible user interface. Installation and commissioning are simple. The cabinet communicates with the luminaires using a patented central dimming technology. The control signal is embedded on the existing electrical line – no new cabling is required. An intuitive, locally accessible interface makes it easy for authorized users to set schedules in order to meet site specific lighting needs, local regulations, and energy codes.

SiteWise system diagram

SiteWise system interface

SiteWise has an intuitive user interface that makes it easy to plan, edit, and implement lighting schedules for your site. Authorized users can access the interface via a local app.

To ensure that only authorized users can access your lighting, SiteWise offers two user types, each with different permissions. An advanced user, or administrator, can set and edit schedules using the ten pre-set scenes, assign those schedules to calendar days, and check system status.

For everyday use, a basic user can manually override a schedule that is currently running but cannot create or edit schedules.

SiteWise system specifications

The SiteWise system includes both luminaires and controls. The controls used for SiteWise are circuit load dependent. Required for a complete installation are the following SiteWise components: user interface, control kit, dimming signal transmitter cabinet, and dimming signal receiver located in the luminaire (**SW** option). Optional luminaire-integrated or external motion sensors may also be specified as required. Within the electrical closet, the control kit and dimming signal transmitter cabinet are installed into the electrical system between the existing breaker panel and the site luminaires. New LED luminaires containing the dimming signal receiver are installed on the site. Once completed, use of the interface allows for scheduling and override capabilities. Wireless access point and tablet should be supplied by others. Complete information on the control system can be found on the SiteWise website at **signify.com/sitewise**

121 LED wall sconce

Wall Mount

Specifications

Housing

Main body cast housing and back plate made of a low copper die cast Aluminum alloy for a high resistance to corrosion, 0.100" (2.5mm) minimum thickness. Hinged door allows access to driver and LED compartment.

Mounting

Mounting is completed through integral back plate that features a separate recessed feature for hook and lock quick mount plate that secures with two set screws from bottom of luminaire. Mounting plate is located in the center of the luminaire width and 3.5" above the luminaire bottom (lens down position). Luminaire ships fully assembled, ready to install.

Light Engine

Composed of 4 main components: Heat Sink / LED Module / Optical System / Driver. Electrical components are RoHS compliant. IP66 sealed light engines. LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

Heat Sink

Integral door/heat sink design made of low copper die cast Aluminum alloy for a high resistance to corrosion.

LED Module

Composed of high performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000K nominal (+/- 275K), CRI 70 Min. Available in other color temperatures including Cool White, 5700K and Warm White, 3000K.

SiteWise Network System

SiteWise system includes a controller fully integrated in the luminaire that enables the luminaires to communicate with a dimming signal transmitter cabinet located on site using patented central dimming technology. A locally accessible mobile app allows users to access the system and set functionalities such as ON/OFF, dimming levels and scheduling. SiteWise is available with motion response options in order to bring the light back to 100% when motion is detected. Additional functionalities are available such as communication with indoor lighting and connection to BMS systems.

Hardware

All exposed screws are stainless and/or corrosion resistant and captive.

Optical System

The advanced LED optical systems provide IES Types 2, 3, 4. Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Dark sky compliant with 0% uplight and U0 per IESNA TM-15.

Driver

High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Surge Protection

Each luminaire is provided as standard with surge protector (designed SP1) tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/5kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High Test Level 10kV / 5kA.

Wiring (supplied by others)

Splices must be made in the junction box.

Finish

Five standard colors offered in textured black, white, bronze, dark gray and medium gray. Color in accordance with the AAMA 2604 standard. Application of polyester powder coat paint 2.5 mils minimum. The thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. RAL and custom color matching available.

LED Products Manufacturing Standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with EC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

LED Useful Life

Luminaire Useful Life accounts for LED lumen maintenance. Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, LED LM-80/TM-21, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C.

Certifications and Compliance

cULus Listed for Canada and USA suitable for wet locations when mounted downward facing. cULus Listed for Canada and USA suitable for damp locations when inverted upward facing when mounted in covered ceiling application. Emergency Battery Pack option is tested and listed to UL924 and CSA C22.2 No. 141-10 DesignLights Consortium qualified on models as listed on DLC QPL. Luminaire is rated for operation in ambient temperature of -40°C (-40°F) up to +40°C (+104°F)[4].

Limited Warranty

5-year limited warranty. See signify.com/warranties for details and restrictions. Visit our eCatalog or contact your local sales representative for more information.

121 LED wall sconce

Wall Mount

LED Performance

Predicted lumen depreciation data[1]				
Ambient Temperature (°C)	Driver mA	Calculated L_{70} hours[1,2]	L_{70} per TM-21[2,3]	Lumen Maintenance % @ 60,000 hours
25°C	up to 1200 mA	>100,000	>42,000	88%

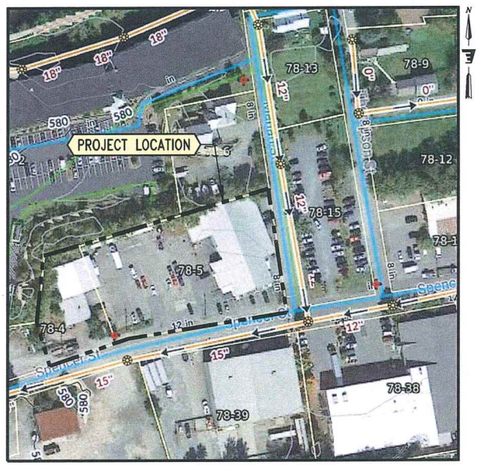
1. Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.
2. L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output.
3. Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours.
4. 32L rated for 30°C at 1000mA.

Signify, North America Corp.,
200 Franklin Square Drive,
Somerset, NJ 08873
Tel. 855-486-2216

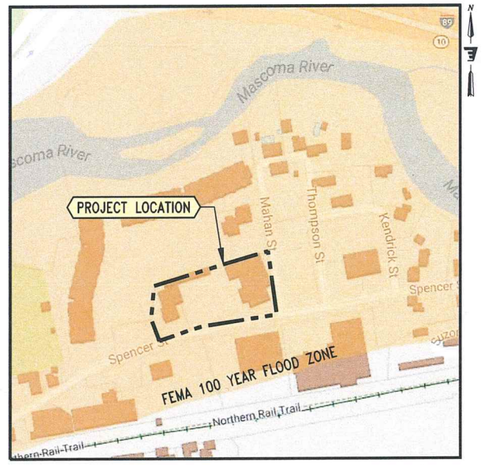
Signify, Canada Ltd.,
281 Hillmount Rd, Markham, ON,
Canada L6C 2S3
Tel. 800-668-9008

www.gardcolighting.com

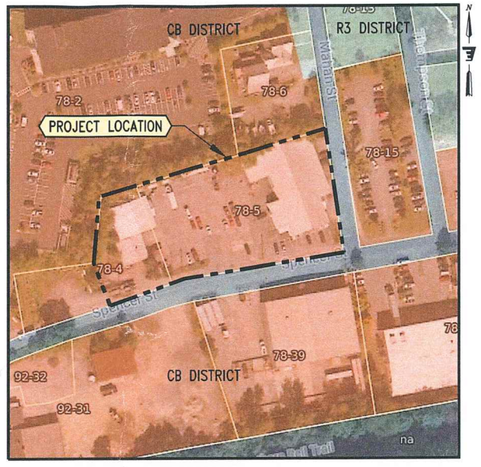
Building and Site Renovations
37 Spencer Street
Lebanon, NH



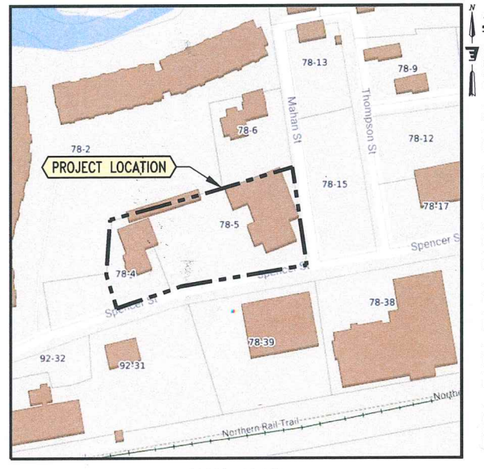
ORTHO MAP
1"=200'



FLOODPLAIN MAP
1"=400'



ZONING MAP
1"=200'



TAX MAP
1"=250'

ABUTTERS:

TAX LOT 78-2 (APT 9+UP)
EMERSON PLACE APRTMS, LLC
150 PRESIDENTIAL WAY, STE 220
WOBURN, MA 01801

TAX LOT 78-4 (INDUSTRIAL WAREHOUSE)
TACKLE PARTNERS, LLC
279 DOGFORD ROAD
ETNA, NH 03750

TAX LOT 78-6 (SINGLE FAMILY)
MICHAEL DAVIDSON
31 ELM STREET
LEBANON, NH 03766

TAX LOT 78-15 (OFFICE)
GEOKON NORTH, LLC
48 SPENCER STREET
LEBANON, NH 03766

TAX MAP 78-38 (R&D BUILDING)
GEOKON, INC.
48 SPENCER STREET
LEBANON, NH 03766

TAX MAP 78-39 (INDUSTRIAL WAREHOUSE)
MASON STORAGE, LLC
38 SPENCER STREET
LEBANON NH 03766

TAX MAP 92-31 (MUNICIPAL)
CITY OF LEBANON
51 NORTH PARK STREET
LEBANON NH 03766

ZONING CHART

	Required	Existing	Proposed	Notes
Tax Map & Lot #		78-5	78-5	
Street Address		37 Spencer Street	37 Spencer Street	
Zoning District		**LDD**	**LDD**	3
Overly Districts		Flood Plain	Flood Plain	3
Area of Lot (acres)	0.07	1.42	1.42	3
Building Footprint Area (sf)		12,325	12,325	1
Building Gross Floor Area (sf)		15,640	**19,930**	1
Parking Spaces	0	45	**44**	3
Building Height (ft)	55 (max.)	24'-3"	**32'-3 3/4"**	1
Number of stories		2	2	1
Use		Offfice and Storage	**Residential**	1
Impervious Area (sf)		53,341	**49,640**	3
Impervious Area (%)		86%	**80%**	3
Total Builing Coverage on Lot (sf)		19,578	**18,777**	4
Total Building Coverage on Lot (%)	No Maximum	32%	**30%**	4
Setbacks (ft)				
Front	**10**	19.3 / 11.0	**14.4 / 11.3**	1, **2**
Rear	10	5.9	5.9	1
Side	None	**NA**	**NA**	1

All Bold text in this table indicates revisions from previously approved site plan. (3)

Notes:
1. Accounts for 37 Spencer St building only.
2. **Front setback measured on both Spencer St and Mahan St.**
3. Accounts for all of Lot 78-5.
4. Accounts for all buildings on Lot 78-5.

TRANSIT NOTES

1. THE CLOSEST TRANSIT SERVICE TO THE SUBJECT PROPERTY IS ADVANCE TRANSIT'S STOP AT LEBANON CITY HALL SERVED BY BOTH THE BLUE AND RED LINES.
2. THE LEBANON CITY HALL TRANSIT STOP IS APPROXIMATELY 0.4 MILES FROM THE SUBJECT PROPERTY.

DRAWING LIST

SUBJECT PROPERTY:

TAX LOT 78-5 (INDUSTRIAL WAREHOUSE)
TACKLE PARTNERS, LLC
37 SPENCER STREET
LEBANON, NH 03766

OWNER\APPLICANTS:

TACKLE PARTNERS, LLC
279 DOGFORD ROAD
ETNA, NH 03750

CONSULTANTS:

CIVIL ENGINEER
ENGINEERING VENTURES, PC
KEVIN WORDEN, PE
85 MECHANIC ST. SUITE B2-2
LEBANON, NH 03766

ARCHITECT
STUDIO NEXUS ARCHITECTS & PLANNERS
JAMES WASSER, AIA, LEED AP
P.O. BOX 275
WHITE RIVER JUNCTION, VT 05001

TOPOGRAPHIC SURVEY
DIBERNARDO ASSOCIATES, LLC
JOSEPH DIBERNARDO, LLS
PO BOX 52
BELLOWS FALLS, VT 05101

Stamp

Rev. No.	Description	Chkd.
1	10/28/2019 - REVISIONS PER STAFF REVIEW	
2	11/18/2019 - REVISIONS PER PLANNING BOARD REVIEW	
3	02/24/2020 - AMENDMENT TO APPROVED SITE PLAN	

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
802.735.7040 fax 802.735.7045
85 Mechanic Street, Suite B2-3, Lebanon, NH 03766
tel. 603.442.9333
www.engineeringventures.com

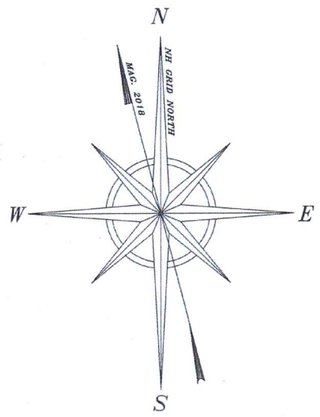
Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 443-3088

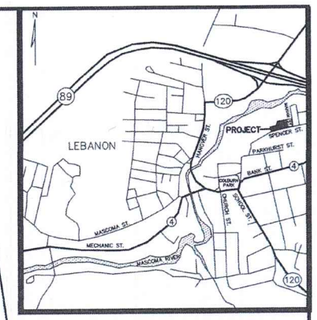
Sheet Title: Cover Sheet

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	As Noted
Date:	October 14, 2019

C0.0
19327.01





~LOCATION MAP~

MICHAEL DAVIDSON
31 ELM STREET
LEBANON, NH 03766
TAX ID #78-6

EMERSON PLACE APARTMENTS, LLC
150 PRESIDENTIAL WAY, STE 220
WOBURN, MA 01801
TAX ID #78-2

EMERSON PLACE APARTMENTS, LLC
150 PRESIDENTIAL WAY, STE 220
WOBURN, MA 01801
TAX ID #78-2

GEORON, INC.
48 SPENCER STREET
LEBANON, NH 03766
TAX ID #78-15

CITY OF LEBANON
51 NORTH PARK STREET
LEBANON, NH 03766
TAX ID #92-31&32

DANIELS MOVING & STORAGE
PO BOX 375
LEBANON, NH 03766
TAX ID #78-39

PARCEL #78-5
AREA: 1.42 ACRES ±

PARCEL #78-4
AREA: 0.20 ACRES ±

~ MAHAN STREET ~

~ SPENCER STREET ~

FOUND IRON ROD
5/8" ø FLUSH

FOUND IRON ROD
5/8" ø UP 0.3'

N74°07'50"E
140.10'

N74°07'15"E
146.78'

N74°02'30"E
71.00'

S09°37'50"E
18.50'

S09°37'50"E
247.70'

N06°03'45"E
103.50'

N06°03'45"E
71.04'

S80°52'10"W
248.80'

S70°18'36"W
154.79'

S70°19'27"W
102.89'

S70°19'27"W
18.40'

N83°21'45"E
117.60'

N83°45'20"E
18.01'

N07°43'15"W
92.53'

N07°43'15"W
96.80'

LPG TANK
(EV: Removed post survey)

BUILDING
BASE FLOOD ELEVATION: 578.4'

BUILDING
BASE FLOOD ELEVATION: 579.8'

SLAB EL: 576.77'

SLAB EL: 576.48'

SLAB EL: 576.97'

SLAB EL: 578.66'

SLAB EL: 578.17'

SLAB EL: 578.06'

SLAB EL: 576.17'

SILL EL: 576.13'

TOP OF DOOR FRAME: 585.32'

ASPHALT SURFACE

PARKING SPACE (TYP.)

HANDICAP RAMP

CONCRETE SURFACE (TYP.)

STEPS (TYP.)

MACHINERY SERVICING BUILDING

BOLLARD (TYP.)

FLUSH ISLAND

RETAINING WALL

GRAVEL SURFACE (TYP.)

PRIVATE ACCESS

RIGHT OF WAY BENEFITTING 78-4. SEE BOOK 775 PAGE 138

TO PARKHURST STREET

TO DEAD END

30.00'

EDGE OF RIGHT OF WAY (SEE REF. PLANS 3 & 4)

EDGE OF TRAVELED WAY

REVISION: 2-26-19 - ADDED MISSING DIMENSION ON NORTHERN LINE, REVISED RIGHT OF WAY LOCATION & ADDED REFERENCE PLANS 3&4.. JAD

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

~ REFERENCE PLANS ~

1. PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY IN LEBANON GRAFTON COUNTY NEW HAMPSHIRE FOR EMERSON GARDENS LTD. PARTNERSHIP", DATED JUNE 6, 2003, RECORDED AS PLAN NO. 11131 IN THE GRAFTON COUNTY REGISTRY OF DEEDS, PREPARED BY BRUNO ASSOCIATES INC. P.C.
2. PLAN ENTITLED "SURVEY PLAT FOR FRANK PETER & JANET E. CANILLAS SPENCER STREET - LEBANON, NEW HAMPSHIRE", DATED JULY 6, 1998, RECORDED AS PLAN NO. 9796, PREPARED BY T&M ASSOCIATES, INC.
3. PLAN ENTITLED "SPENCER LAND SHOWING ADJOINING PROPERTIES LEBANON, N.H.", DATED OCT. 1932, RECORDED AS PLAN BOOK 626 PAGE 104, PREPARED BY S.H. STEVENS.
4. PLAN ENTITLED "ELDRIDGE PARK SHOWING ADJOINING PROPERTIES LEBANON, N.H.", DATED OCT. 1932, RECORDED AS PLAN BOOK 626 PAGE 104, PREPARED BY S.H. STEVENS.

~ NOTES ~

1. METHOD OF SURVEY: GEOMAX ZOOM 80 ROBOTICS TOTAL STATION.
2. BEARINGS ARE REFERENCED TO NH GRID NORTH AND ELEVATIONS ARE TIED TO THE NAVD 88 VERTICAL DATUM.
3. DIBERNARDO ASSOCIATES IS NOT RESPONSIBLE FOR PROPERTY DESCRIPTIONS PREPARED BY OTHER PERSONS FOR CONVEYANCE OF THE PROPERTY SHOWN HEREON.
4. THIS PLAN WAS PREPARED FOR THE SOLE USE OF TACKLE PARTNERS LLC AND IS NOT INTENDED TO BE USED BY ANY OTHER INDIVIDUAL OR BUSINESS WITHOUT THE CONSENT OF SAID PARTIES AND DIBERNARDO ASSOCIATES, LLC.
5. PROPERTY IS LOCATED IN THE SPECIAL FLOOD HAZARD AREA ZONE AE. BASE FLOOD ELEVATIONS WERE CALCULATED FROM THE FLOOD INSURANCE PROFILE. PROPERTY IS NOT LOCATED IN THE REGULATORY FLOODWAY.

~ REFERENCE DEEDS ~

1. QUITCLAIM DEED FROM MARGARET S. CARLTON, TRUSTEE OF THE FRED P. CARLTON REVOCABLE TRUST DATED OCTOBER 19, 1999 TO TACKLE PARTNERS, LLC RECORDED IN BOOK 4256 PAGE 126 ON DECEMBER 19, 2016.

~ LEGEND ~

- PROPERTY LINE
- RIGHT OF WAY LINE
- CONTOUR
- IRON PIN FOUND
- STOCKADE FENCE
- CHAIN LINK FENCE
- UTILITY POLE
- OVERHEAD WIRE
- CATCH BASIN
- FIRE HYDRANT
- WATER SHUTOFF
- DRAIN MANHOLE
- GUY ANCHOR

~ CHAPTER 676:18 SECTION III CERTIFICATION ~

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

JOSEPH A. DIBERNARDO, N.H. LLS #963

2/26/19
DATE

BOUNDARY & TOPOGRAPHIC PLAN
PROPERTY OF

TACKLE PARTNERS LLC

279 DOGFORD ROAD
ETNA, NH 03750
PARCEL ID: 78-4&5

37 SPENCER STREET ~ GRAFTON COUNTY ~ LEBANON, NEW HAMPSHIRE

DIBERNARDO ASSOCIATES, LLC
VT NH
LICENSED LAND SURVEYORS
P.O. BOX 52
BELLOWS FALLS, VT 05101
802-463-3031 ~ 603-368-5609

STATE OF NEW HAMPSHIRE — LICENSED LAND SURVEYOR — NO. 963 — JOSEPH A. DIBERNARDO

DATE *SEPTEMBER 27, 2018*	SCALE *1" = 20'*
DRAWN BY *JD*	CK'D BY *JTW*
SURVEYED BY *JD*	
DWG.NO. *3240*	

LINETYPE LEGEND

PROPOSED FEATURES	EXISTING FEATURES
100 — MAJOR CONTOUR	100 — *MAJOR CONTOUR*
98 — MINOR CONTOUR	98 — *MINOR CONTOUR*
EDGE OF RIVER	*EDGE OF RIVER*
EDGE OF POND	*EDGE OF POND*
	FLOOD PLAIN
PROPERTY LINE	*PROPERTY LINE*
RIGHT OF WAY	*RIGHT OF WAY*
SETBACK	*SETBACK*
EASEMENT	*EASEMENT*
LOC — LIMIT OF CONSTRUCTION	*LIMIT OF CONSTRUCTION*
LOD — LIMIT OF DISTURBANCE	*LIMIT OF DISTURBANCE*
SF — SILT FENCE	*SILT FENCE*
DEMOLITION WORK	*DEMOLITION WORK*
CENTERLINE	*CENTERLINE*
EDGE OF PAVEMENT	*EDGE OF PAVEMENT*
EDGE OF GRAVEL	*EDGE OF GRAVEL*
EDGE OF CONCRETE	*EDGE OF CONCRETE*
CURB	*CURB*
x — FENCE (BARBED WIRE)	*FENCE (BARBED WIRE)*
o — FENCE (CHAIN LINK)	*FENCE (CHAIN LINK)*
□ — FENCE (WOODEN)	*FENCE (WOODEN)*
GUARD RAIL	*GUARD RAIL*
TREE LINE	*TREE LINE*
	EDGE OF WETLANDS – DELINEATED
	EDGE OF WETLANDS – APPROXIMATE
STONE WALL	*STONE WALL*
S — SANITARY SEWER	S — *SANITARY SEWER*
	(S) — *SANITARY SEWER APPROX.*
FM — SEWER FORCEMAIN	FM — *SEWER FORCEMAIN*
SS — SEWER SERVICE	SS — *SEWER SERVICE*
SLA — DISPOSAL AREA LATERAL	SLA — *DISPOSAL AREA LATERAL*
ST — STORM LINE	ST — *STORM LINE*
	(ST) — *STORM LINE APPROX.*
UD — UNDER DRAIN	UD — *UNDER DRAIN*
FD — FOUNDATION DRAIN	FD — *FOUNDATION DRAIN*
RD — ROOF DRAIN	RD — *ROOF DRAIN*
DITCH/SWALE	*DITCH/SWALE*
T — TELECOMM	T — *TELECOMM*
	(T) — *TELECOMM APPROX.*
UGT — UNDERGROUND TELECOMM	UGT — *UNDERGROUND TELECOMM*
OHT — OVERHEAD TELECOMM	OHT — *OVERHEAD TELECOMM*
E — ELECTRIC LINE	E — *ELECTRIC LINE*
	(E) — *ELECTRIC APPROX.*
UGE — UNDERGROUND ELECTRIC	UGE — *UNDERGROUND ELECTRIC*
OHE — OVERHEAD ELECTRIC	OHE — *OVERHEAD ELECTRIC*
SL — ELECTRICAL SITE LIGHTING	SL — *ELECTRICAL SITE LIGHTING*
W — WATER LINE	W — *WATER LINE*
	(W) — *WATER APPROX.*
WS — WATER SERVICE	WS — *WATER SERVICE*
GAS — GAS LINE	GAS — *GAS LINE*
	(G) — *GAS APPROX.*
CATV — CABLE TV	CATV — *CABLE TV*
UGTV — UNDERGROUND CABLE TV	UGTV — *UNDERGROUND CABLE TV*
OHTV — OVERHEAD CABLE TV	OHTV — *OVERHEAD CABLE TV*
STM — STEAM LINE	STM — *STEAM LINE*
LPS — LOW PRESSURE STEAM	LPS — *LOW PRESSURE STEAM*
HPS — HIGH PRESSURE STEAM	HPS — *HIGH PRESSURE STEAM*
HW — HOT WATER	HW — *HOT WATER*
CW — CHILLED WATER	CW — *CHILLED WATER*

SYMBOL LEGEND

PROPOSED FEATURES	EXISTING FEATURES
BOUND	*BOUND*
BENCHMARK	*BENCHMARK*
DRILL HOLE	*DRILL HOLE*
SURVEY POINT	*SURVEY POINT*
IRON PIN	*IRON PIN*
TP1 TEST PIT	*TP1 TEST PIT*
B1 BORING	*B1 BORING*
P1 PERC TEST	*PERC TEST*
CATCH BASIN (SQUARE)	*CATCH BASIN (SQUARE)*
CATCH BASIN (ROUND)	*CATCH BASIN (ROUND)*
HEADWALL	*HEADWALL*
FLARED END SECTION	*FLARED END SECTION*
STONE APRON	*STONE APRON*
DRAIN MANHOLE (DMH)	*DRAIN MANHOLE (DMH)*
C/O DRAINAGE CLEAN OUT	*C/O DRAINAGE CLEAN OUT*
SANITARY SEWER MANHOLE (SMH)	*SANITARY SEWER MANHOLE (SMH)*
C/O SANITARY CLEAN OUT	*C/O SANITARY CLEAN OUT*
HYDRANT	*HYDRANT*
WATER SHUTOFF	*WATER SHUTOFF*
WV TAPPING SLEEVE & VALVE	*WV TAPPING SLEEVE & VALVE*
GV GATE VALVE	*GV GATE VALVE*
WELL	*WELL*
UTILITY POLE	*UTILITY POLE*
GUY POLE	*GUY POLE*
ELECTRICAL MANHOLE	*ELECTRICAL MANHOLE*
FLOOD LIGHT	*FLOOD LIGHT*
LIGHT POST	*LIGHT POST*
TELEPHONE MANHOLE	*TELEPHONE MANHOLE*
NATURAL GAS MANHOLE	*NATURAL GAS MANHOLE*
COMMUNICATION MANHOLE	*COMMUNICATION MANHOLE*
BOLLARD	*BOLLARD*
SINGLE POLE SIGN	*SINGLE POLE SIGN*
DOUBLE POLE SIGN	*DOUBLE POLE SIGN*
+100.5 SPOT ELEVATION	*+ 100.00 SPOT ELEVATION*
ACCESSIBLE PARKING STALL	*ACCESSIBLE PARKING STALL*
DRAINAGE FLOW	*DRAINAGE FLOW*
DECIDUOUS TREE	*DECIDUOUS TREE*
CONIFEROUS TREE	*CONIFEROUS TREE*

GENERAL NOTES

1. EXACT OBJECT LOCATIONS MAY DIFFER FROM THAT AS SHOWN, AND ADDITIONAL SUB-SURFACE AND SURFACE UTILITIES AND STRUCTURES MAY EXIST. THE CONTRACTOR IS TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK AND TO CALL DIG SAFE 72 HOURS PRIOR TO ANY DIGGING, DRILLING OR BLASTING.
2. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL FROM THE ENGINEER.
3. THE CONTRACTOR IS INSTRUCTED TO COOPERATE WITH ANY AND ALL OTHER CONTRACTORS PERFORMING WORK ON THIS JOB SITE DURING THE PERFORMANCE OF THIS CONTRACT.
4. THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO EXISTING CONDITIONS OR BETTER AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE, UNLESS NOTED OTHERWISE.
5. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
6. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING, AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, AND CERTIFICATES.
7. THE CONTRACTOR WILL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW HAMPSHIRE STATE LICENSED LAND SURVEYOR.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE ALL PLAN SHEETS AND SPECIFICATIONS, AND COORDINATE WORK WITH ALL CONTRACTS FOR THE SITE.
9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT EXPLORATORY TEST PITS AS MAY BE REQUIRED TO DETERMINE UNDERGROUND CONDITIONS.
10. ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS FOR CONSTRUCTION.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
12. MAINTAIN FLOW FOR ALL EXISTING UTILITIES, UNLESS NOTED OTHERWISE.
13. CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND IMPERVIOUS SURFACES.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER INSTALLATION, MONITORING, MAINTENANCE AND REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES AND TAKING PRECAUTIONARY STEPS TO AVOID ANY SEDIMENT TRANSFER TO NEIGHBORING SITES OR WATERS OF THE STATE.

STANDARD ABBREVIATIONS

BENCHMARK	BM	END OF VERTICAL CURVE ELEVATION	EVCE	LIMITS OF CONSTRUCTION	LOC	REINFORCED CONCRETE PIPE	RCP
BEGINNING OF VERTICAL CURVE ELEVATION	BVCE	END OF VERTICAL CURVE STATION	EVCS	LIMITS OF DISTURBANCE	LOD	RIGHT-OF-WAY	ROW
BEGINNING OF VERTICAL CURVE STATION	BVCS	EXISTING	EX	MAXIMUM	MAX	SANITARY	SAN
CAST-IN-PLACE	CIP	EXISTING GRADE/GROUND	EG	MINIMUM	MIN	SANITARY MANHOLE	SMH
CAST IRON	CI	FINISHED FLOOR	FF	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	MUTCD	SILT FENCE	SF
CATCH BASIN	CB	FINISHED GRADE/GROUND	FG	MONITORING WELL	MW	SLOPE	S=
CENTERLINE	℄	FIELD INLET	FI	MONUMENT	MON	STATION	STA
CLEAN OUT	C/O	FLARED END SECTION	FES	NOT IN CONTRACT	NIC	STORM MANHOLE	DMH
CORRUGATED METAL PIPE	CMP	FOOT, FEET	FT	NOT TO SCALE	NTS	TANGENT	TAN
CUBIC FEET	CF	FOOTING	FTG	POINT OF CURVATURE	PC	TANGENT TO CURVE	TC
CUBIC FEET PER SECOND	CFS	FOUNDATION	FND	POINT OF INTERSECTION	PI	TAPPING SLEEVE AND VALVE	TS&V
CUBIC YARD	CY	GALLONS PER MINUTE	GPM	POLYETHYLENE, PROFESSIONAL ENGINEER	PE	TEMPORARY BENCHMARK	TBM
DIAMETER	DIA	GATE VALVE	GV	PROPERTY LINE	PL	TEST PIT	TP
DISTRIBUTION BOX	D-BOX	HEADWALL	HW	PERC TEST, POINT OF TANGENCY	PT	TOP OF BANK	TOB
DUCTILE IRON	DI	HIGH DENSITY POLYETHYLENE	HDPE	POLYVINYL CHLORIDE	PVC	TOP OF CURB	TOC
EDGE OF CONCRETE	EOC	HYDRANT	HYD	POINT OF VERTICAL INTERSECTION	PVI	TOP OF WALL	TOW
EDGE OF GRAVEL	EOG	INTERSECTION	INT	POND	PND	TYPICAL	TYP
EDGE OF PAVEMENT	EOP	INVERT	INV	QUANTITY	QTY	VERIFY IN FIELD	VIF
ELECTRIC	ELEC	IRON PIN	IP	QUALITY ASSURANCE	QA	WATER VALVE	WV
ELECTRIC MANHOLE	EMH	IRON PIPE SIZE	IPS	QUALITY CONTROL	QC		
ELEVATION	ELEV	LENGTH	L=	RADIUS	R=		

STATE OF NEW HAMPSHIRE
No. 13286
LICENSED
PROFESSIONAL ENGINEER
Stamp

Rev. No.	Description	Chkd.

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.863.6225 • fax 802.863.6306
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766
tel. 603.442.9333
www.engineeringventures.com

Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3068

Sheet Title: Site Legend and Notes

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	Not to Scale
Date:	October 14, 2019

C0.1
19327.01

NOTES

1. METHOD OF SURVEY: GEOMAX ZOOM 80 ROBOTICS TOTAL STATION.
2. BEARINGS ARE REFERENCED TO NH GRID NORTH AND ELEVATIONS ARE TIED TO THE NAVD 88 VERTICAL DATUM.
3. DIBERNARDO ASSOCIATES IS NOT RESPONSIBLE FOR PROPERTY DESCRIPTIONS PREPARED BY OTHER PERSONS FOR CONVEYANCE OF THE PROPERTY SHOWN HEREON.
4. EXISTING CONDITIONS SHOWN HERE WERE PREPARED FOR THE SOLE USE OF TACKLE PARTNERS LLC AND IS NOT INTENDED TO BE USED BY ANY OTHER INDIVIDUAL OR BUSINESS WITHOUT THE CONSENT OF SAID PARTIES AND DIBERNARDO ASSOCIATES, LLC.
5. BASE FLOOD ELEVATION AT 37 SPENCER STREET: 579.8'. PROPERTY IS LOCATED IN THE SPECIAL FLOOD HAZARD AREA ZONE AE. BASE FLOOD ELEVATIONS WERE CALCULATED FROM THE FLOOD PROFILE IN THE FEMA "FLOOD INSURANCE STUDY - FOR THE MASCOMA RIVER" AND THE ONLINE POSITIONING USER SERVICE FROM NATIONAL GEODETIC SURVEY AND NOAA. PROPERTY IS NOT LOCATED IN THE REGULATORY FLOODWAY.
6. PURSUANT TO CHAPTER 676:18 SECTION III CERTIFICATION, JOSEPH A. DIBERNARDO, N.H. L.L.S #963 HAS CERTIFIED THAT THE SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

REFERENCE PLANS

1. PLAN ENTITLED "BOUNDARY & TOPOGRAPHIC PLAN, PROPERTY OF TACKLE PARTNERS, LLC", DATED SEPTEMBER 27, 2018, REVISED FEBRUARY 26, 2019, AS PREPARED BY DIBERNARDO ASSOCIATES, LLC.
2. PLAN ENTITLED "ALTA/ACSM LAND TITLE SURVEY IN LEBANON GRAFTON COUNTY NEW HAMPSHIRE FOR EMERSON GARDENS LTD. PARTNERSHIP", DATED JUNE 6, 2003, RECORDED AS PLAN NO. 11131 IN THE GRAFTON COUNTY REGISTRY OF DEEDS, PREPARED BY BRUNO ASSOCIATES INC. P.C.
3. PLAN ENTITLED "SURVEY PLAT FOR FRANK PETER & JANET E. CANILLAS SPENCER STREET – LEBANON, NEW HAMPSHIRE", DATED JULY 6, 1998, RECORDED AS PLAN NO. 9796, PREPARED BY T&M ASSOCIATES, INC.
4. PLAN ENTITLED "SPENCER LAND SHOWING ADJOINING PROPERTIES LEBANON, N.H.", DATED OCT. 1932, RECORDED AS PLAN BOOK 626 PAGE 104, PREPARED BY S.H. STEVENS.
5. PLAN ENTITLED "ELDRIDGE PARK SHOWING ADJOINING PROPERTIES LEBANON, N.H.", DATED OCT. 1932, RECORDED AS PLAN BOOK 626 PAGE 104, PREPARED BY S.H. STEVENS.

REFERENCE DEEDS

1. QUITCLAIM DEED FROM MARGARET S. CARLTON, TRUSTEE OF THE FRED P. CARLTON REVOCABLE TRUST DATED OCTOBER 19, 1999 TO TACKLE PARTNERS, LLC RECORDED IN BOOK 4256 PAGE 126 ON DECEMBER 19, 2016.

GRAPHIC SCALE

40 0 20 40 80 160

1 inch = 40 ft.
for sheet size 24" x 36"

STATE OF NEW HAMPSHIRE
No. 13286
LICENSED PROFESSIONAL ENGINEER
Stamp

Rev. No.	Description	Chkd.

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel: 802.865.5225 • fax 802.865.6306
85 Mechanic Street, Suite B-3 Lebanon, NH 03766
tel: 603.442.3333
www.engineeringventures.com

Client:
Tackle Partners, LLC
c/o Meg Carlton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3088

Sheet Title: Site Context Plan

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	1" = 40'
Date:	October 28, 2019

C1.1

19327.01

Plotted: 12/17/2019 2:09 PM

S:\Projects\19-2019\19327 - 37 Spencer St Renovations\dwg\Sheet Files\19327 C1.1 - Existing Conditions Plan.dwg

NOTES

1. METHOD OF SURVEY: GEOMAX ZOOM 80 ROBOTICS TOTAL STATION.
2. BEARINGS ARE REFERENCED TO NH GRID NORTH AND ELEVATIONS ARE TIED TO THE NAVD 88 VERTICAL DATUM.
3. DIBERNARDO ASSOCIATES IS NOT RESPONSIBLE FOR PROPERTY DESCRIPTIONS PREPARED BY OTHER PERSONS FOR CONVEYANCE OF THE PROPERTY SHOWN HEREON.
4. EXISTING CONDITIONS SHOWN HERE WERE PREPARED FOR THE SOLE USE OF TACKLE PARTNERS LLC AND IS NOT INTENDED TO BE USED BY ANY OTHER INDIVIDUAL OR BUSINESS WITHOUT THE CONSENT OF SAID PARTIES AND DIBERNARDO ASSOCIATES, LLC.
5. BASE FLOOD ELEVATION AT 37 SPENCER STREET: 579.8'. PROPERTY IS LOCATED IN THE SPECIAL FLOOD HAZARD AREA ZONE AE. BASE FLOOD ELEVATIONS WERE CALCULATED FROM THE FLOOD PROFILE IN THE FEMA "FLOOD INSURANCE STUDY FOR THE MASCOMA RIVER" AND THE ONLINE POSITIONING USER SERVICE FROM NATIONAL GEODETIC SURVEY AND NOAA. PROPERTY IS NOT LOCATED IN THE REGULATORY FLOODWAY.
6. PURSUANT TO CHAPTER 676:18 SECTION III CERTIFICATION, JOSEPH A. DIBERNARDO, N.H. L.L.S #963 HAS CERTIFIED THAT THE SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN.

N74°07'15"E 146.78'

N74°07'50"E 140.10'

S08°17'10"E 18.20'

S08°09'05"E 191.70'

S80°52'10"W 248.80'

37 SPENCER ST
BASE FLOOD ELEVATION: 579.8'

25 SPENCER ST
BASE FLOOD ELEVATION: 578.4'

BUILDING
BASE FLOOD ELEVATION: 578.4'

PARCEL #78-5
AREA: 1.424 ACRES

SLAB EL: 576.77'

LOADING DOOR
SLAB EL: 576.97'

LOADING DOOR
SLAB EL: 578.17'

LOADING DOOR
SLAB EL: 578.66'

LOADING DOOR
SLAB EL: 578.06'

GRAVEL PARKING

ASPHALT SURFACE

PARKING SPACE (TYP.)

ACCESSIBLE RAMP

MACHINERY SERVICING BUILDING

TOP OF DOOR FRAME: 595.32'

SILL EL: 578.13'

LOADING ACCESS

STEPS (TYP.)

CONCRETE SURFACE (TYP.)

BOLLARD (TYP.)

FLUSH ISLAND

SPENCER STREET

1/47/1

46/11

10/10

GRAPHIC SCALE

10 0 5 10 20 40

1 inch = 10 ft.
for sheet size 24" x 36"

STATE OF NEW HAMPSHIRE
JOSEPH A. DIBERNARDO
No. 13286
LICENSED PROFESSIONAL ENGINEER
Stamp

Rev. No.	Description	Chkd.

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel: 802.865.6225 • fax: 802.865.6626
65 Main Street, Suite 313 Lebanon, NH 03766
tel: 603.442.3333
www.engineeringventures.com

Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3068

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Sheet Title: Existing Conditions

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	1" = 10'
Date:	October 14, 2019

C1.2
19327.01

Plotted: 10/17/2019 3:58 PM
S:\Projects\19-2019\19327 Mr Lebanon 37 Spencer St Renovations\dwg\Sheet Files\19327 C1.1 - Existing Conditions Plan.dwg

SITE NOTES

- C1 VERTICAL GRANITE CURB
- C2 CONCRETE SIDEWALK
- C3 – NOT USED
- C4 NEW ASPHALT PAVING/PATCHING
- C5 PARKING SPACES ON EXISTING ASPHALT
- C6 WALKWAY ON EXISTING ASPHALT
- C7 WHEEL STOP
- C8 SNOW STORAGE AREA
- C9 WAY FINDING SIGN: "37 SPENCER ST -->" "<-- 25 SPENCER ST" SIGN E, DETAIL 8/C4.3
- C10 ADA PARKING SYMBOL SIGN WITH VAN ACCESSIBLE PLACARD SIGNS A AND B, DETAIL 8/C4.3
- C11 CONCRETE PAD AND HVAC SYSTEMS
- C12 – NOT USED
- C13 TEMPORARY INLET PROTECTION – INLET SILT SOCKS. INSTALL IN ALL CATCH BASINS ADJACENT TO AND DOWNSTREAM OF PROJECT SITE. REMOVE ALL SEDIMENT COLLECTED IN SOCK AS SOON AS POSSIBLE.
- C14 ASPHALT SAWCUT LINE
- C15 "ONE–WAY" SIGN SIGN D, DETAIL 8/C4.3
- C16 "DO NOT ENTER" SIGN SIGN D, DETAIL 8/C4.3

WATER NOTES

- W1 12" X 6" TAPPING SLEEVE AND 6" VALVE
- W2 6" D.I. WATER SERVICE, 148± LF
- W3 SPLIT DOMESTIC AND SPRINKLER SERVICE LINES
- W4 DOMESTIC WATER WATER SHUTOFF VALVE
- W5 1–1/2" DOMESTIC WATER SERVICE ENTRANCE INV. = 571.25
- W6 4" D.I. SPRINKLER WATER SERVICE ENTRANCE INV. = 571.25

PAVEMENT MARKINGS

- PM1 4" SSYL PARKING SPACE STRIPING
- PM2 4" SSYL ACCESSIBLE AISLE STRIPING
- PM3 BLUE AND WHITE INTERNATIONAL SYMBOL OF ACCESSIBILITY
- PM4 8" SSYL WALKWAY DELINEATION STRIPING
- PM5 18" X 5' WHITE CROSSWALK BARS, 3' O.C.
- PM6 4" SSYL STRIPED ISLAND

SEWER NOTES

- S1 6" SEWER SERVICE EXIT INV. = 572.3
- S2 SEWER CLEANOUT
- S3 6" SDR35 PVC SEWER SERVICE 91 LF, S = 0.058 FT/FT
- S4 EXISTING SEWER MANHOLE NEW 6" DROP INVERT CONNECTION INV. IN (6") = 567.0 ROTATE BOTTOM ELBOWS TO ALIGN WITH EXITING FLOW *EXIST INV. OUT (10") = 564.60*

FOUND IRON ROD 5/8" ø UP 0.3'

PARCEL #78–5 AREA: 1.423± ACRES

37 SPENCER ST 1ST FLOOR FFE: 580.80'

MAHAN STREET

SPENCER STREET

CONCRETE SURFACE (TYP.)

ASPHALT SURFACE

BOLLARD (TYP.)

RIM: 575.25±

GRAPHIC SCALE

10 0 5 10 20 40

1 inch = 10 ft.
for sheet size 24" x 36"

N

Stamp

Rev. No.	Description	Chkd.
1	10/28/2019 – REVISIONS PER STAFF REVIEW	
2	11/18/2019 – REVISIONS PER PLANNING BOARD REVIEW	
3	02/24/2020 – AMENDMENT TO APPROVED SITE PLAN	

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel 802.863.6225 • fax 802.863.8306
85 Mechanic Street, Suite 413 Lebanon, NH 03766
tel 603.442.9333
www.engineeringventures.com

Client: Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3088

Sheet Title: Site Plan

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	1" = 10'
Date:	October 14, 2019

C2.1
19327.01

S:\Projects\19-327\1327 Mr Lebanon 37 Spencer St Renovations\dwg\Final Files\19327 C2.1 - Site Plan.dwg

LANDSCAPE NOTES

- L1 — THUNBERG SPIREA (*SPIREAE THUNBERGII*) PLANT AT 5' O.C., SIZE: 1 GAL, TOTAL QUANT: 35
- L2 — HOSTA (*HOSTA CAPITATA*) PLANT AT 5' O.C., SIZE: 1 GAL, TOTAL QUANT: 20
- L3 — KOBUS MAGNOLIA (*MAGNOLIA KOBUS*) SIZE: 2"-3" CALIPER, TOTAL QUANT: 2
- L4 — FLOWERING DOGWOODS (*BENTHAMIDIA FLORIDA*) SIZE: 2"-3" CALIPER, TOTAL QUANT: 3
- L5 — GRASS AREAS BETWEEN BUILDING AND STREET WITH NO HARDSCAPES OR OTHER LANDSCAPES
- L6 — BLUE FALSE INDIGO (*BAPTISIA AUSTRALIS*) PLANT 3' O.C., SIZE: 1 QT, TOTAL QUANT: 38
- L7 — THORNLESS HONEYLOCUST (*GLEDITSIA TRIACANTHOS* FORM *INERMIS*) SIZE: 2"-3" CALIPER, TOTAL QUANT: 3
- L8 — TIGER LILY (*LILIUM COLUMBIANUM*) PLANT AT 3' O.C., SIZE: 1 QT, TOTAL QUANT: 38
- L9 — BLUE MUFFIN ARROWWOOD (*VIBURNUM DENTATUM*) SIZE: 2 GAL, TOTAL QUANT: 11
- L10 — ANNABELLE HYDRANGEA (HYDRANGEA ARBORESCENS 'ANNABELLE') PLANT AT 5' O.C., SIZE: 2 QT, TOTAL QUANT: 22

3

PARKING LOT SHADE CALCULATIONS

PROPOSED PARKING LOT SHADING:

	37 SPENCER ST	25 & 37 SPENCER ST
PARKING AREA (SF)	7,373	15,789
SHADE AREA (SF)	1,673	1,714
SHADE AREA (%)	22.7%	10.8%

EXISTING PARKING LOT SHADING: 0 SF

ADDITIONAL HEAT ISLAND MITIGATION: IMPERVIOUS AREA REDUCTION OF **3,701** SF

3

FOUND IRON ROD 5/8" ø FLUSH

FOUND IRON ROD 5/8" ø UP 0.3'

37 SPENCER ST BASE FLOOD ELEVATION: 578.8'

37 SPENCER ST 1ST FLOOR FFE: 580.80'

BUILDING BASE FLOOD ELEVATION: 578.4'

SLAB EL: 576.77'

PARCEL #78-5 AREA: 1.424 ACRES

37 SPENCER ST PARKING AREA FOR SHADE CALCULATIONS

SHADE AREA (TYP) 30' DIA PER 6.2(E)(3)(a)

25 & 37 SPENCER ST PARKING AREA FOR SHADE CALCULATIONS

25 SPENCER ST BASE FLOOD ELEVATION: 578.4'

SLAB EL: 576.48'

ASPHALT SURFACE

CONCRETE SURFACE (TYP.)

BOLLARD (TYP.)

SPENCER STREET

Apt. 1 — 1 — 597 SF
Apt. 2 — 2 — 574 SF
Apt. 3 — 3 — 574 SF
Apt. 4 — 4 — 583 SF
Apt. 5 — 5 — 601 SF
Apt. 6 — 6 — 509 SF
Apt. 7 — 7 — 611 SF
Apt. 8 — 8 — 744 SF
Apt. 9 — 9 — 512 SF
Apt. 10 — 10 — 713 SF
Apt. 11 — 11 — 636 SF
Apt. 12 — 12 — 656 SF
Apt. 13 — 13 — 652 SF

Elec. · JC · Stor · Laundry · Hall · Sprinkler · Lobby

GRAPHIC SCALE

10 0 5 10 20 40

1 inch = 10 ft
for sheet size 24" x 36"

STATE OF NEW HAMPSHIRE — PROFESSIONAL ENGINEER — LICENSED — NICHOLAS A. MORE — No. 13266 — Stamp

Rev. No.	Description	Chkd.
1	10/28/2019 – REVISIONS PER STAFF REVIEW	
2	11/18/2019 – REVISIONS PER PLANNING BOARD REVIEW	
3	02/24/2020 – AMENDMENT TO APPROVED SITE PLAN	

ENGINEERING VENTURES PLLC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.448.3161 fax. 802.448.3163
85 Mechanic Street, Suite C3-1 Lebanon, NH 03766
tel. 603.442.5933
www.engineeringventures.com

Client: Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 646-3088

Sheet Title: Landscaping Plan

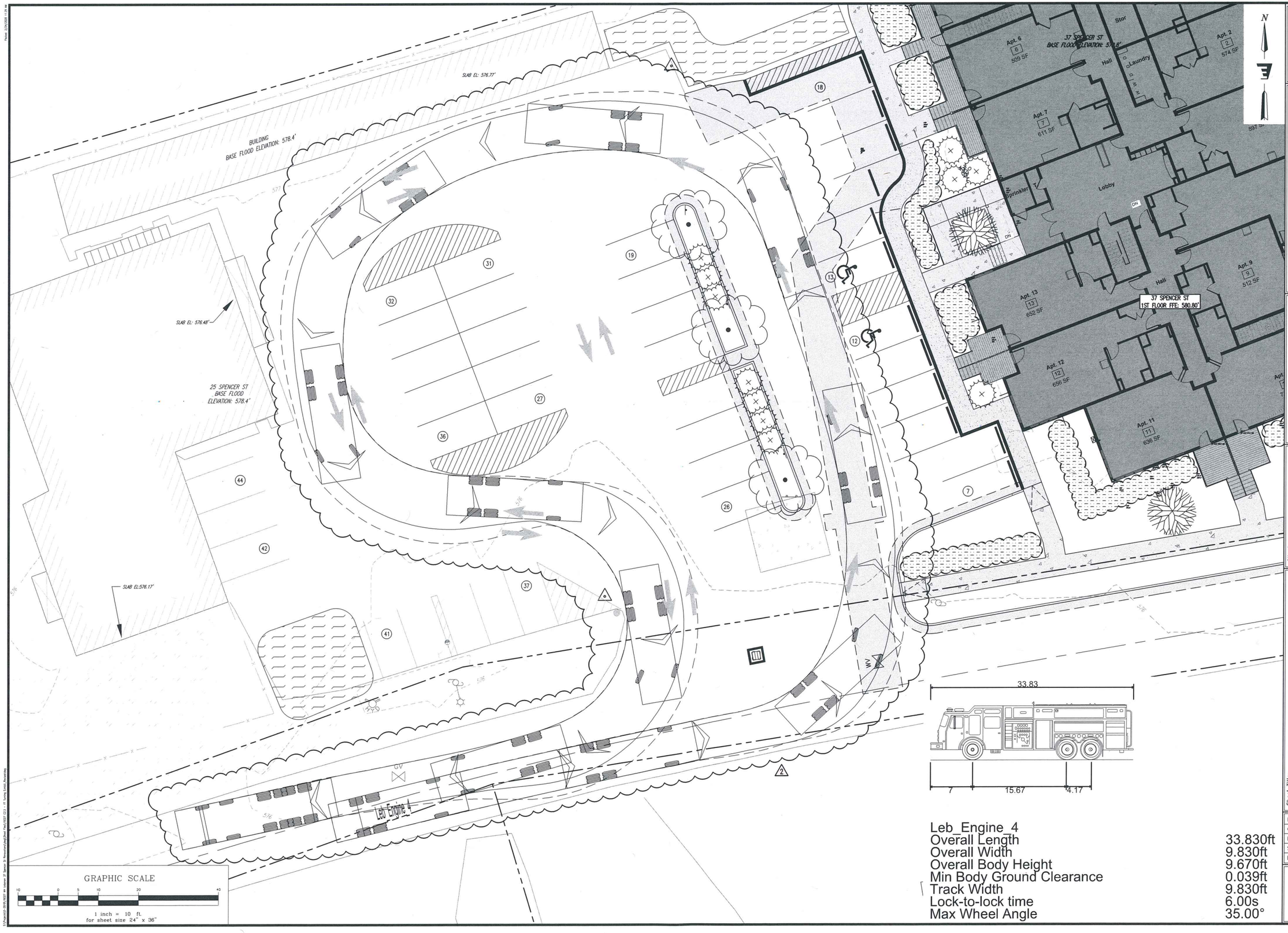
Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	1" = 10'
Date:	October 14, 2019

C2.2

19327.01

S:\Projects\19-2019\19327.01 - 37 Spencer St Renovation\Civil\Site Plan\19327.01 C2.2 - Landscape Plan.dwg



Leb_Engine_4	
Overall Length	33.830ft
Overall Width	9.830ft
Overall Body Height	9.670ft
Min Body Ground Clearance	0.039ft
Track Width	9.830ft
Lock-to-lock time	6.00s
Max Wheel Angle	35.00°

STATE OF NEW HAMPSHIRE
Nicholas Fiore
No. 13286
LICENSED
PROFESSIONAL ENGINEER
Stamp

Rev. No.	Description	Chkd.
1	10/28/2019 – REVISIONS PER STAFF REVIEW	
2	11/18/2019 – REVISIONS PER PLANNING BOARD REVIEW	
3	02/24/2020 – AMENDMENT TO APPROVED SITE PLAN	

ENGINEERING VENTURES PLLC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.865.5225 • fax 802.863.0306
85 Mechanic Street, Suite B3 Lebanon, NH 03766
tel. 603.442.2333
www.engineeringventures.com

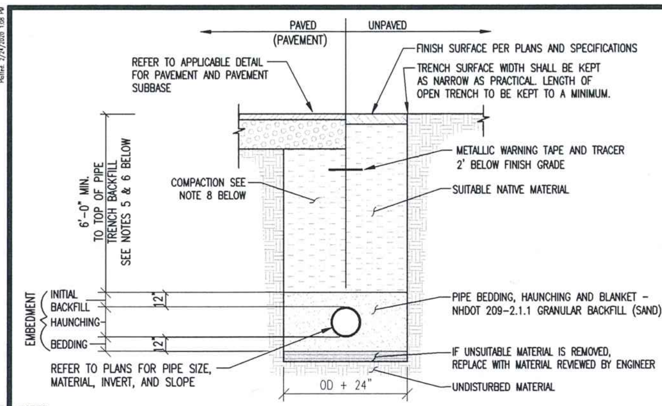
Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 642-5068

Sheet Title: Fire Truck Turning Exhibit

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	1" = 10'
Date:	November 18, 2019

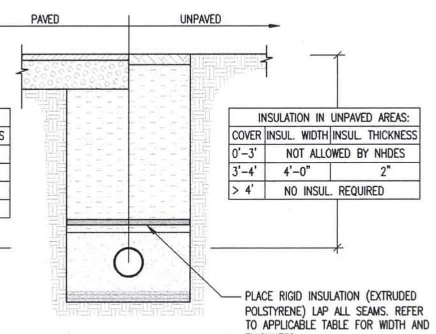
C2.3
19327.01



NOTES:

1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR FULL LENGTH OF PIPE.
3. PROVIDE 6'-0" MINIMUM COVER OVER WATER PIPE. OTHERWISE, REFER TO INSULATION OVER SHALLOW WATER LINE DETAIL.
4. INSTALL WATER PIPE IN ACCORDANCE WITH AWWA STANDARD C600.
5. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
6. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED IN THE EARTHWORK SPECIFICATIONS INCLUDED ON THESE PLANS.
7. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
8. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

WATER TRENCH DETAIL (1)
NOT TO SCALE



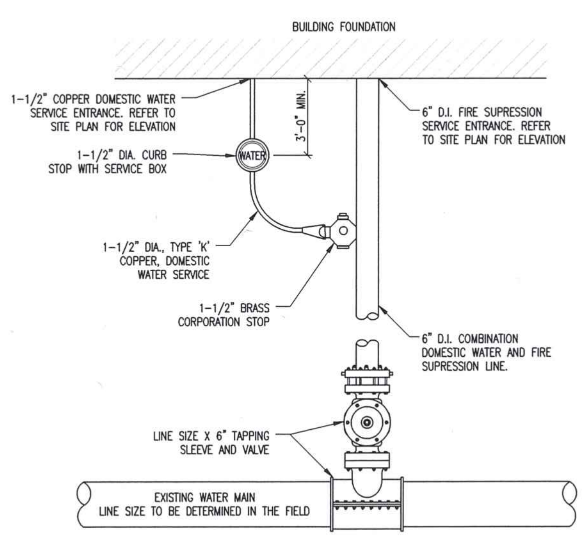
INSULATION		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	NOT ALLOWED BY NHDES	
3'-4'	6'-0"	3"
4'-5.5'	4'-0"	2"
> 5.5'	NO INSUL. REQUIRED	

INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	NOT ALLOWED BY NHDES	
3'-4'	4'-0"	2"
> 4'	NO INSUL. REQUIRED	

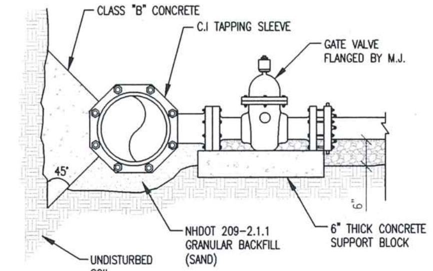
TRENCH INSULATION NOTES:

1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. NOTIFY DEPARTMENT OF PUBLIC WORKS TO REVIEW INSTALLATION AND BACKFILL.
3. ALL SHALLOW WATER INSTALLATIONS MUST BE APPROVED BY ENGINEER PRIOR TO INSTALLATION.

INSULATION OVER SHALLOW WATER LINE DETAIL (2)
NOT TO SCALE



TYPICAL WATER SERVICE ENTRANCE (3)
NOT TO SCALE

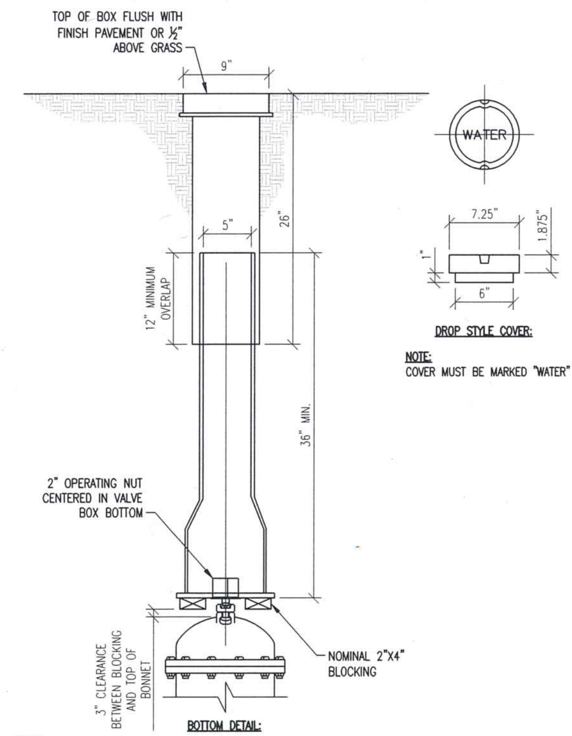


SECTION VIEW

NOTES:

1. AREA OF THRUST BLOCK BEARING AGAINST UNDISTURBED SOIL SHALL BE THE SAME AS FOR 1/4" BEND (90°) BEND.
2. UTILIZE MEGALUG MECHANICAL JOINT RESTRAINT ON M.J. END.
3. SEE TYPICAL GATE VALVE DETAIL FOR VALVE BOX INFORMATION.
4. SEE TYPICAL WATER TRENCH DETAIL FOR PIPE BEDDING REQUIREMENTS.

TAPPING SLEEVE AND VALVE DETAIL (4)
NOT TO SCALE

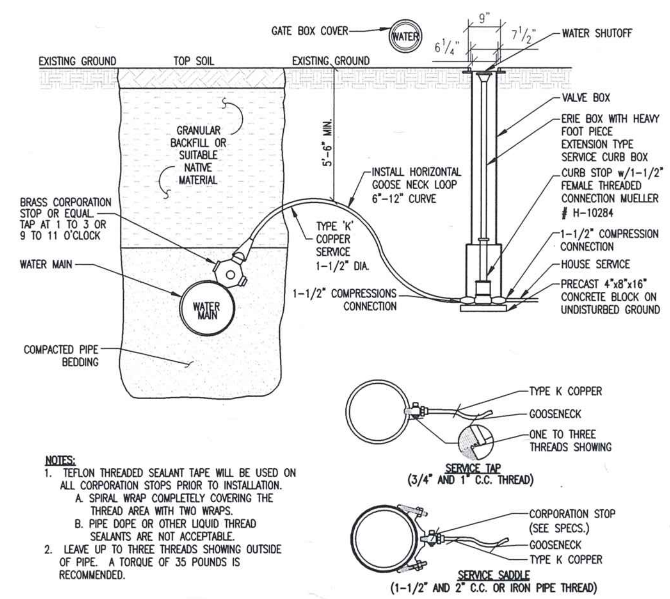


NOTE:
COVER MUST BE MARKED "WATER"

NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES WILL CONFORM TO TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISHED GRADE

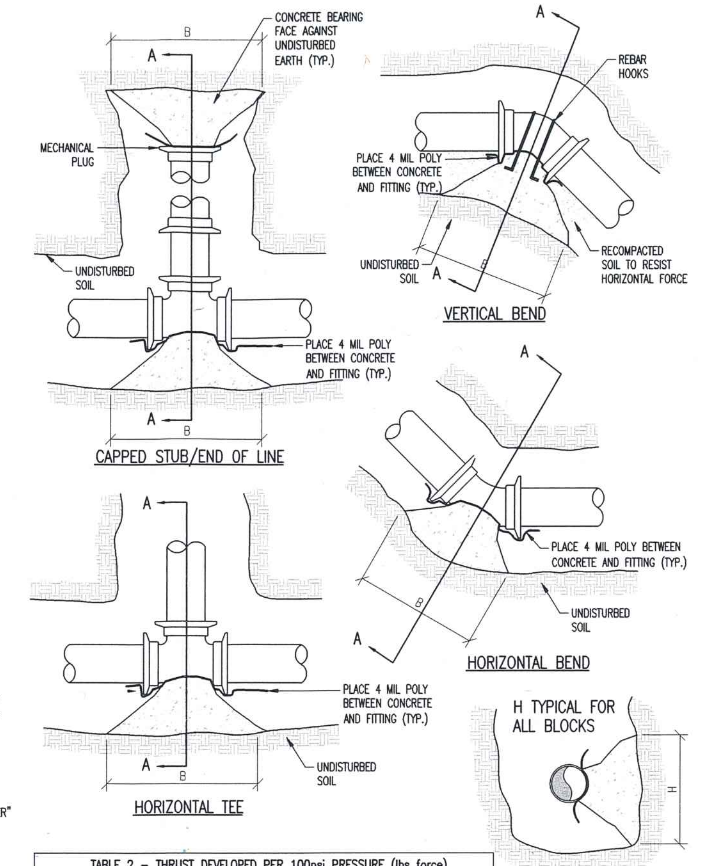
TYPICAL VALVE BOX (5)
NOT TO SCALE



NOTES:

1. TEFLON THREADED SEALANT TAPE WILL BE USED ON ALL CORPORATION STOPS PRIOR TO INSTALLATION.
   A. SPIRAL WRAP COMPLETELY COVERING THE THREAD AREA WITH TWO WRAPS.
   B. PIPE DOPE OR OTHER LIQUID THREAD SEALANTS ARE NOT ACCEPTABLE.
2. LEAVE UP TO THREE THREADS SHOWING OUTSIDE OF PIPE. A TORQUE OF 35 POUNDS IS RECOMMENDED.

COPPER SERVICE CONNECTION DETAIL (6)
NOT TO SCALE



NOTES:

1. PERFORM HYDROSTATIC AND LEAKAGE TEST PRESSURE PER SPECIFICATIONS.
2. PLACE 4 MIL POLYETHYLENE BETWEEN FITTINGS AND THRUST BLOCKS.
3. CONCRETE SHALL BE CLASS B.
4. ON ALL THRUST BLOCKS, B SHALL BE THE GREATER DIMENSION, USE 1.5:1 TO 2:1 FOR B:H.

TABLE 2 - THRUST DEVELOPED PER 100psi PRESSURE (lbs force)

PIPE DIAMETER IN.	VALVES AND DEAD ENDS, TEES	90° BENDS	45° BENDS	22½° BENDS	11¼° BENDS
4	1810	2560	1390	635	320
6	3740	5290	2860	1370	690
8	6430	9100	4920	2320	1170
10	9680	13680	7410	3610	1820
12	13690	19350	10470	5080	2550
14	18380	25990	14100	6100	3080
16	23780	33630	18280	7960	4020

TABLE 1 - BEARING STRENGTH OF UNDISTURBED SOIL

SOIL TYPE	BEARING STRENGTH
PEAT, ETC.	0 lb/ft^2
SOFT CLAY	500 lb/ft^2
SAND	1000 lb/ft^2
SAND AND GRAVEL	1500 lb/ft^2
SAND AND GRAVEL WITH CLAY	2000 lb/ft^2
SAND AND GRAVEL CEMENTED WITH CLAY	4000 lb/ft^2
HARD PAN	5000 lb/ft^2

DETERMINING MINIMUM BEARING FACE AREA:

THE AREA (ft^2) SHALL BE CALCULATED BY DETERMINING THE TOTAL THRUST GENERATED AT THE FITTING.

DIVIDE THE THRUST DEVELOPED (lbs force) (FROM TABLE 2) BY THE BEARING STRENGTH OF THE SOIL (FROM TABLE 1). THE RESULT IS THE AREA OF THE SOIL REQUIRED TO RESIST THE THRUST (A).

THE AREA CALCULATED WILL BE FOR THE AREA OF CONCRETE UP AGAINST THE TRENCH WALL (i.e. THE BACK SIDE OF THE BLOCK). USE THE TEST PRESSURE TO DETERMINE THE TOTAL THRUST.

$$\text{AREA} = \frac{\text{THRUST DEVELOPED (lbs force)}}{\text{BEARING STRENGTH OF SOIL}}$$

TYPICAL BEARING THRUST BLOCK (7)
NOT TO SCALE

WATER NOTES

GENERAL

1. BEFORE ANY WATER LINE WORK IS COMMENCED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE CITY OF LEBANON DPW AT LEAST 48 HOURS IN ADVANCE.
2. THE CONTRACTOR SHALL COLLECT AND MAINTAIN "AS BUILT" INFORMATION DURING THE INSTALLATION OF THE WATER SYSTEM. "AS BUILT" DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR UPON COMPLETION OF THE WATER SYSTEM.

WATER MAINS

1. PERFORM FLUSHING, PRESSURE AND LEAKAGE TESTING ACCORDING TO AWWA C600 AND NFPA 24 (LATEST REVISION) ON EACH PIPE LINE.
2. THE ENGINEER SHALL BE GIVEN AT LEAST 48 HOURS NOTICE BEFORE THE TEST IS CONDUCTED. ALL TESTING MUST BE WITNESSED BY THE ENGINEER.
3. SPECIFIED TEST PRESSURE IS A MINIMUM OF 200 PSI OR 1.5X THE WORKING PRESSURE, WHICHEVER IS GREATER. THE PRESSURE DURING TEST SHALL NOT VARY BY MORE THAN 5 PSI.

EXISTING UTILITIES

1. LOCATION OF UTILITY INSTALLATIONS AND UNDERGROUND STRUCTURES ARE SHOWN AS APPROXIMATE ON THE CONTRACT DOCUMENTS.
2. ALL UTILITIES SHALL BE LOCATED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
3. EXISTING UTILITIES SHALL BE PROTECTED AND SUPPORTED DURING CONSTRUCTION.
4. ALL WATER, GAS, CABLE, TELEPHONE, ELECTRIC, SEWER, AND OTHER UTILITIES FOUND TO INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED IN A MANNER ACCEPTABLE TO THE ENGINEER.

PIPE BEDDING

1. SAND BEDDING MEETING REQUIREMENTS OF EARTHWORK SPECIFICATIONS.
2. SAND BLANKET MEETING REQUIREMENTS OF EARTHWORK SPECIFICATIONS.
3. TRENCH FINAL BACKFILL MATERIAL - MATERIAL WILL EXCLUDE PIECES OF PAVEMENT, ORGANIC MATTER, TOPSOIL, ALL WET OR SOFT MUCK, PEAT, CLAY, LARGE ROCKS (6" DIMENSION), OR ANY MATERIAL DETERMINED BY THE ENGINEER THAT WILL NOT BE SUITABLE.

PIPE TRENCH BACKFILL

1. MEET EARTHWORK SPECIFICATIONS FOR PLACEMENT AND COMPACTION.

DUCTILE IRON PIPE (WATER)

1. D.I. PIPE CONFORM TO AWWA/ANSI C151.
2. LININGS AND LINING REPAIR TO AWWA/ANSI C104.
3. JOINTS CONFORM TO AWWA/ANSI C111 AND C115.
4. FITTINGS CONFORM TO AWWA/ANSI C110, C153, C105.
5. KEEP INSIDE OF PIPE CLEAN AND FREE OF DEBRIS.
6. REJECT ANY PIPE WHICH IS DROPPED DURING HANDLING.
7. MECHANICAL JOINT GLANDS SHALL BE "MEGA-LUG" RETAINER GLANDS.
8. CAST IRON FITTINGS: ANSI A21.10, 250 PSI PRESSURE RATING.
9. DUCTILE IRON FITTINGS: ANSI A21.10, 350 PSI PRESSURE RATING.
10. JOINTS: MECHANICAL, PUSH-ON, AND FLANGED:
    A. RUBBER GASKET JOINT, ANSI A21.11
11. GASKETS:
    A. MECHANICAL AND PUSH-ON JOINTS: ANSI A21.11
    B. FLANGED JOINT: ⅛" THICK RING OR FULL FACED RUBBER, ANSI A21.15.
12. BOLTS/NUTS:
    A. MECHANICAL JOINT: ANSI A21.11
    B. FLANGED JOINT: ANSI A21.15
13. LININGS:
    A. INTERIOR -CEMENT LINED-DOUBLE THICKNESS WITH BITUMINOUS SEAL.
    B. EXTERIOR -BITUMINOUS COATING APPROX. 1 MIL THICK, ANSI A21.51, ANSI A21.15, AND ANSI A21.10.
    C. FLANGE MACHINED FACE COATING: ANSI A21.15.
14. LAYING PIPE:
    A. PIPE SHALL BE LAID WITH BELL ENDS FACING IN THE DIRECTION OF LAYING.
    B. WHERE PIPE IS LAID ON A SLOPE OF 5% OR MORE, THE LAYING SHALL START AT THE LOW END AND PROCEED UPHILL, WITH THE BELL ENDS UPGRADE.
    C. A WATERTIGHT PLUG SHALL BE PLACED IN THE OPEN ENDS OF INSTALLED PIPE WHEN PIPE LAYING IS NOT IN PROGRESS.
    D. MAX. PERMISSIBLE DEFLECTION IS 75% OF AWWA SPEC. C600.
15. SERRATED SILICON BRONZE WEDGES:
    A. D.I. PIPE SIZE 3"-12" - 2 PER JOINT.
    B. D.I. PIPE SIZE >12" - 4 PER JOINT.

CHLORINATION OF DOMESTIC WATER LINES

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS IN ADVANCE OF BEGINNING ANY DISINFECTION OF WATER MAINS
2. CONTRACTOR SHALL BE RESPONSIBLE FOR BACTERIOLOGICAL TESTING AS REQUIRED BY THIS SPECIFICATION AND REFERENCE STANDARDS MENTIONED.
3. DISINFECT ALL NEW PIPELINE SYSTEMS IN ACCORDANCE WITH AWWA C651, INCLUDING:
   A. METHOD OF CHLORINE APPLICATION. USE CONTINUOUS FEED METHOD OR SLUG METHOD. (TABLET METHOD IS NOT ACCEPTABLE.)
   B. FORM OF CHLORINE UTILIZED.
   C. FINAL FLUSHING.
   D. BACTERIOLOGICAL TESTING
   E. REPETITION OF PROCEDURE

GATE VALVES

1. RESILIENT SEAT GATE VALVES BY AMERICAN FLOW CONTROL (AFC), SERIES 2500, (HARTFORD, VT).
2. DUCTILE IRON BODY GATE VALVES TO MEET AWWA C515 AND SHALL BE EPOXY COATED (FUSION BONDED) INSIDE AND OUT.
3. STEM CONSTRUCTION: NON-RISING.
4. STEM SEALS: DOUBLE O-RING.
5. GATE: DUCTILE IRON RUBBER ENCAPSULATED WEDGE.
6. BONNET HARDWARE: STAINLESS STEEL.
7. OUTLET CONNECTION: STANDARD MECHANICAL JOINT
8. OPERATION: OPEN COUNTERCLOCKWISE.

TAPPING SLEEVES AND VALVES

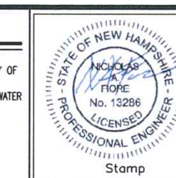
1. TAPPING VALVES
   A. TAPPING VALVES TO MEET ANSI/AWWA C515, STANDARD FOR RESILIENT SEATED GATE VALVES.
   B. VALVES SHALL HAVE A MINIMUM WORKING PRESSURE OF 250 PSI.
   C. VALVES SHALL OPEN COUNTERCLOCKWISE.
   D. INLET FLANGES SHALL BE CLASS 125, ANSI B16.1, OR ANSI/AWWA C110/A21.10.
   E. OUTLET CONNECTION: STANDARDIZED MECHANICAL JOINT.
   F. STEM SEALS: O RING.
   G. STEM CONSTRUCTION: NON-RISING.
   H. SEATING: PARALLEL SEAT
   I. END CONNECTIONS: MECHANICAL ON RUN, FLANGED ON BRANCH.
2. TAPPING SLEEVES
   A. AWWA C515, LATEST REVISION.
   B. AWWA C207, CLASS D, MAX. WORKING PRESSURE OF 150 PSI.
   C. SLEEVES: SPLIT SLEEVES OF CAST IRON OR DUCTILE IRON.
   D. MECHANICAL JOINT ENDS WITH END AND GASKET SEALS.
   E. PROVIDE A ¾" NPT TEST PLUG OR OTHER PROVISION FOR AIR TESTING THE VALVE AND SLEEVE AT MAXIMUM WORKING PRESSURE.
   F. BOLTS AND NUTS, MECHANICAL JOINTS: HIGH STRENGTH CAST IRON OR HIGH STRENGTH LOW ALLOY STEEL, ANSI/AWWA C111/A21.11-90.
   G. BOLTS AND NUTS, FLANGED JOINTS: HIGH STRENGTH, LOW CARBON STEEL CONFORMING TO ANSI/AWWA C110/A21.10-87, APPENDIX A.
   H. COAT ALL NUTS AND BOLTS WITH A RUST RESISTANT LUBRICANT.
   I. ALL BOLTS AND NUTS USED WITH PIPE SLEEVES SHALL BE BRUSH COATED HEAVILY AFTER FINAL TIGHTENING WITH BITUMASTIC COLD-APPLIED MATERIAL TO THOROUGHLY COVER ALL EXPOSED SURFACES OF BOLTS AND NUTS.

VALVE BOXES

1. ACCEPTABLE MANUFACTURER'S: MUELLER, CLOW, OR EQUAL.
2. CLOW F-2452 SLIDING TYPE, TWO PIECE, OR EQUAL.
3. 5 ¼ INCH SHAFT.
4. SIZE 664-A (40-60 INCH OVERALL LENGTH).
5. CAST IRON.
6. CLOW F-2490 LIDS OR EQUAL.
7. THE WORD "WATER" TO BE CAST INTO TOP OF COVERS, AND ARROW SHOWING DIRECTION OF OPENING.
8. IF DEPTH FROM GRADE TO TOP OF VALVE OPERATING NUT IS GREATER THAN 6'-0 , A VALVE STEM RISER MADE OF HIGH STRENGTH STEEL SHALL BE PROVIDED. DEPTH FROM VALVE STEM RISER NUT TO GRADE WILL BE 4 TO 6 FEET.

CONCRETE

1. CLASS B CONCRETE SHALL HAVE:
   A. MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
   B. AIR ENTRAINMENT OF 4% TO 6% BY VOLUME.
   C. MINIMUM CEMENT CONTENT FOR 4000 PSI CONCRETE IS 564 LBS PER CUBIC YARD.
   D. SLUMP OF 3 TO 5 INCHES.
2. CONCRETE SHALL NOT BE PLACED WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT.
3. CONCRETE SHALL NOT BE DROPPED MORE THAN SIX FEET INSIDE A FORM.
4. MAINTAIN TEMPERATURE OF CONCRETE SURFACE AT MINIMUM 50 DEGREES FAHRENHEIT FOR 72 HOURS AFTER PLACING CONCRETE. PREHEAT ALL ENCLOSURES FOR A MINIMUM OF 2 HOURS TO PROVIDE A MIN. SURFACE TEMPERATURE OF 45 DEGREES FAHRENHEIT.
5. ALLOW TO SET AND CURE ALL THRUST BLOCKS, CONCRETE SUPPORTS, AND ANCHORS A MINIMUM OF 24 HOURS BEFORE BACKFILLING.
6. COMPLETELY CURE AND SET CONCRETE BEFORE ANY HYDROSTATIC OR LEAKAGE TESTING OF PIPELINE SYSTEMS.
7. NONSHRINK GROUT SHALL BE HALCO TRADEMARK, AS MANUFACTURED BY LEHN & FINK INDUSTRIAL PRODUCTS.
8. DO NOT PLACE ANY MORTAR OR GROUT WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT.
9. MORTAR FOR MANHOLES SHALL CONSIST OF THE FOLLOWING:
   A. CEMENT-TYPE II, ASTM C150.
   B. HYDRATED LIME-TYPE N, ASTM C207.
   C. SAND- ASTM C 33, FINE AGGREGATES FOR CONCRETE.
   D. WATER-CLEAN, SUITABLE FOR DRINKING.
10. MIX (BY VOLUME): 1 PART CEMENT, ½ PART LIME, 4 ½ PARTS SAND.



Stamp

Rev. No.	Description	Chkd.

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.863.6225 • fax 802.863.6306
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766
tel. 603.442.9333
www.engineeringventures.com

Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3068

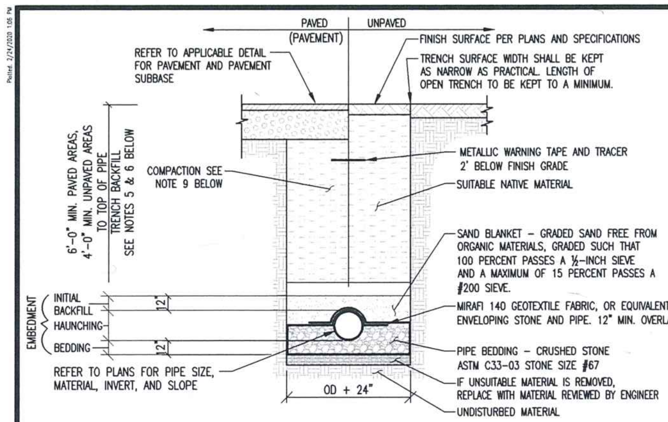
Sheet Title: Water Details and Notes

Project Title: 37 Spencer Street Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	Not to Scale
Date:	October 14, 2019

C4.1

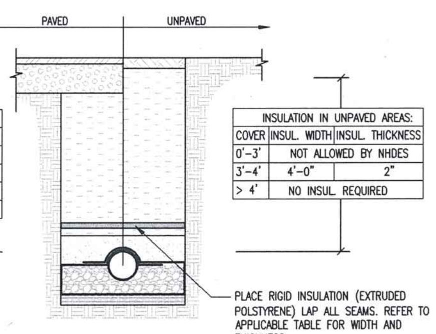
19327.01



NOTES:
1. UNLESS OTHERWISE NOTED, ASSUME CLASS "C" SOILS. PERFORM ALL EXCAVATIONS TO OSHA REQUIREMENTS.
2. BEDDING TO PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF PIPE.
3. FOR SEWER LINES THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 6'-0" IN PAVED AREAS AND 4'-0" IN UNPAVED AREAS. SHALLOWER DEPTHS REQUIRE APPROVAL FROM THE ENGINEER. REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.
4. LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
5. TRENCH BACKFILL MATERIAL, INCLUDING ROADWAY LOCATIONS, SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION AND FREE OF UNSUITABLE MATERIALS AS DEFINED IN THE EARTHWORK SPECIFICATIONS INCLUDED ON THESE PLANS.
6. WHEN APPLICABLE INSTALL PIPE WITH BELL ENDS DOWN SLOPE. PREVENT SEDIMENT FROM ENTERING NEW SEWER SYSTEM DURING CONSTRUCTION.
7. ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER.
8. NO MECHANICAL TAMPERS SHALL BE USED DIRECTLY OVER PIPE TO INSURE PIPE IS NOT DAMAGED.
9. BACKFILL MATERIALS SHALL BE COMPACTED, IN 12" LAYERS, TO 92% OF MODIFIED PROCTOR (ASTM 1557) TO WITHIN 3 FEET OF FINISHED GRADE. IN AREAS UNDER ROADWAYS, DRIVES, AND PARKING THE UPPER 3 FEET SHALL BE COMPACTED, IN 6" LAYERS, TO 95% MODIFIED PROCTOR (ASTM 1557) AND IN LAWN OR OTHER UNDEVELOPED SPACE THE UPPER 3 FEET SHALL BE COMPACTED TO 92% MODIFIED PROCTOR.

GRAVITY SEWER TRENCH DETAIL (1)
NOT TO SCALE

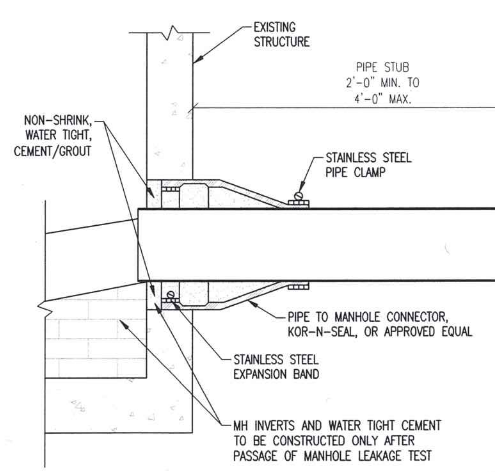
INSULATION IN PAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	NOT ALLOWED BY NHDES	
3'-4'	6'-0"	4"
4'-5'	4'-0"	2"
> 6'	NO INSUL. REQUIRED	



INSULATION IN UNPAVED AREAS:		
COVER	INSUL. WIDTH	INSUL. THICKNESS
0'-3'	NOT ALLOWED BY NHDES	
3'-4'	4'-0"	2"
> 4'	NO INSUL. REQUIRED	

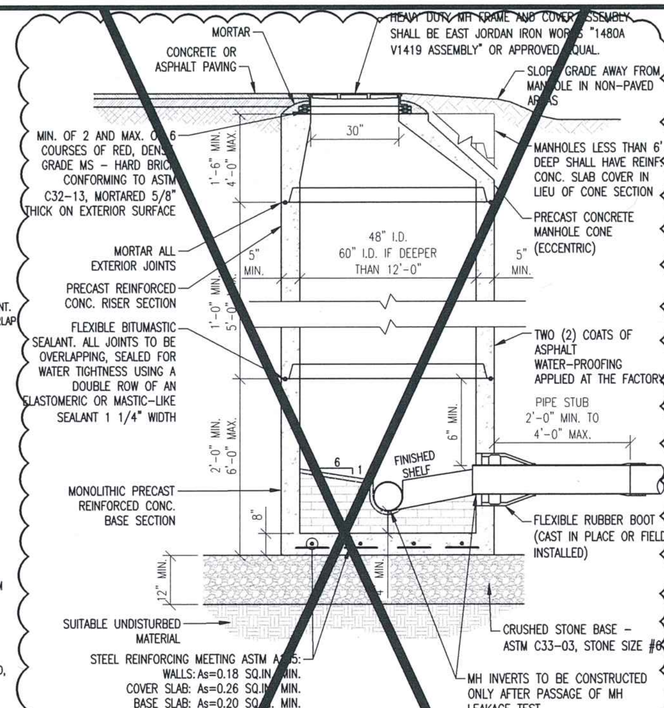
NOTES:
1. REFER TO APPLICABLE TRENCH DETAIL FOR SPECIFIC BACKFILL INFORMATION.
2. NOTIFY DEPARTMENT OF PUBLIC WORKS TO REVIEW INSTALLATION AND BACKFILL.
3. ALL SHALLOW SEWER INSTALLATIONS MUST BE APPROVED BY ENGINEER.
4. THE MINIMUM DEPTH TO THE TOP OF THE PIPE SHALL BE 6'-0" IN PAVED AREAS AND 4'-0" IN UNPAVED AREAS. SHALLOWER DEPTHS REQUIRE APPROVAL FROM THE ENGINEER. REFER TO INSULATION OVER SHALLOW SEWER LINE DETAIL.

SHALLOW SEWER LINE INSULATION DETAIL (2)
NOT TO SCALE



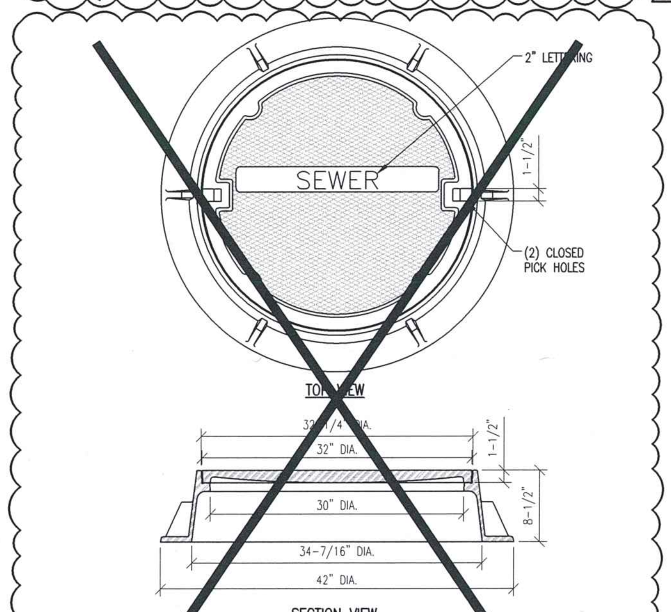
NOTES:
1. CORE HOLE SHALL BE SMOOTH, SYMMETRICAL, AND APPROPRIATELY SIZED FOR SEWER PIPE INSTALLATION.
2. WHEN APPLICABLE CONTRACTOR SHALL RECONSTRUCT EXISTING SHELF IN MANHOLES TO PROVIDE POSITIVE FLOW TO INVERT OUT.

MANHOLE CONNECTION (3)
NOT TO SCALE



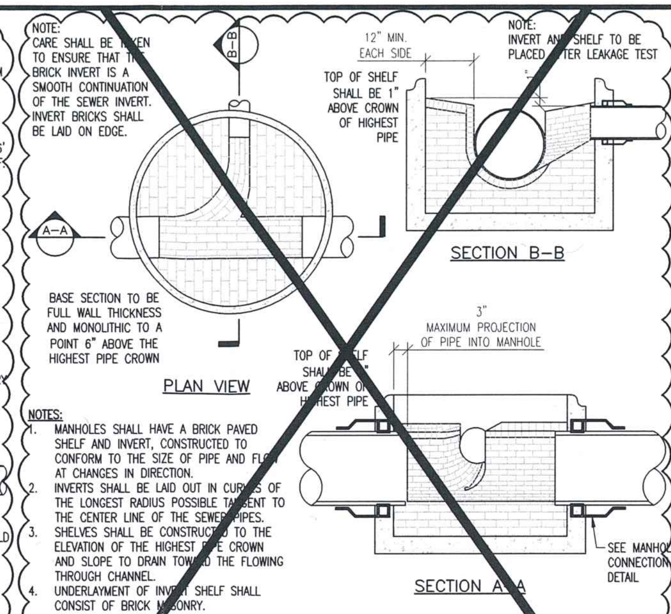
NOTES:
1. INVERTS OF MANHOLES SHALL BE FORMED WITH GRADE SS - HARD BRICK CONFORMING TO ASTM C32-13.
2. PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTING PIPE.
3. IF DEPTH OF MANHOLE IS 6 FT. OR LESS FROM RIM TO CENTERLINE INVERT THEN A FLAT TOP MAY BE INSTALLED. IF DEPTH OF MANHOLE FROM RIM TO CENTERLINE INVERT IS MORE THAN 6 FT. THEN AN ECCENTRIC CONICAL TOP SHALL BE INSTALLED.
4. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF THE INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
5. MANHOLE AND COVER SHALL BE DESIGNED FOR H20 LOADING.
6. MANHOLE SHALL CONFORM TO ASTM C478 SPECIFICATIONS FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS".
7. CONCRETE FC=4,000 PSI @ 28 DAYS MINIMUM
8. BASE SECTION SHALL BE A ONE POUR MONOLITHIC SECTION

SEWER MANHOLE DETAIL (4)
NOT TO SCALE



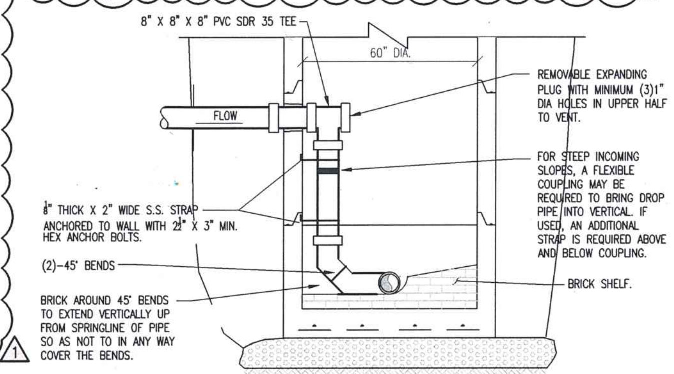
NOTES:
1. ALL DIMENSIONS SHOWN HERE ARE NOMINAL.
2. COVER SHALL BE HEAVY DUTY (H-20) LOAD RATED.
3. FRAME AND COVER ASSEMBLY SHALL BE EAST JORDAN IRON WORKS "1480A V1419 ASSEMBLY" OR APPROVED EQUAL.

SEWER MANHOLE FRAME & COVER (5)
NOT TO SCALE



NOTES:
1. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW AT CHANGES IN DIRECTION.
2. INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES.
3. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL.
4. UNDERLAYMENT OF INVERT SHELF SHALL CONSIST OF BRICK MASONRY.

SEWER MANHOLE INVERT AND SHELF DETAIL (6)
NOT TO SCALE



DROP MANHOLE NOTES:
1. DROP PIPE TO BE SAME DIAMETER AS SEWER DISCHARGING INTO MANHOLE.
2. MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. AT CHANGES IN DIRECTION, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPED TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY. INVERTS AND SHELVES SHALL BE PLACED AFTER TESTING.
3. COORDINATE DROP MANHOLE SPECIFICATIONS AND INSTALLATION REQUIREMENTS WITH THE CITY OF LEBANON DPW.

DROP MANHOLE DETAIL (7)
NOT TO SCALE

SANITARY SEWER NOTES

CONTRACTOR SHALL CONFORM TO GUIDELINES DETAILED IN THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES (ENV-WQ700). CONTRACTOR IS RESPONSIBLE FOR READING AND FOLLOWING THE FULL COMPLETE EDITION PROVIDED BY THE STATE.

A-01. BUILDING SEWERS:
A. MATERIALS: THE BUILDING SEWER SHALL BE CONSTRUCTED IN A MANNER WHICH WILL PREVENT LEAKING, BREAKING OR CLOGGING. ACCEPTABLE MATERIALS FOR THE SEWER ARE RUBBER-RING-JOINTED PVC GRAVITY SEWER PIPE SDR35 ASTM D3034.
B. SIZING AND SLOPE: MINIMUM BUILDING SEWER SIZE IS 8 INCHES (UNLESS SHOWN ON THE PLAN) AND A MINIMUM SLOPE OF 2% AND MAXIMUM SLOPE OF 15%.
C. MANHOLES: BUILDING SEWERS DISCHARGING TO A COLLECTION SEWER SHALL BE CONNECTED THROUGH A MANHOLE OR WITH A WYE FITTING SO AS TO DIRECT FLOW AND MINIMIZE IN-LINE TURBULENCE.
D. LEAKAGE: BUILDING SEWERS SHALL MEET THE LEAKAGE STANDARDS PRESCRIBED IN THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES (CHAPTER ENV-WQ 700). SEE "A-02, J" BELOW FOR MORE DETAIL.

A-02. SEWER FORCE MAINS
A. MATERIALS: PVC SDR-21, ASTM D2241, WITH PUSH-ON GASKETED JOINTS. GASKETS SHALL CONFORM TO ASTM F477.
B. SIZING AND SLOPE: AS NOTED ON THE PROFILE AND DETAILS.
C. THRUST BLOCKS MADE FROM INORGANIC, CORROSION-RESISTANT MATERIAL SHALL BE PLACED AT ALL BENDS, ELBOWS, TEES AND JUNCTIONS.
D. DISCHARGE: FORCE MAINS SHALL ENTER THE GRAVITY SEWER SYSTEM AT THE FLOW LINE OF THE RECEIVING MANHOLE.
E. LEAKAGE: HYDROSTATIC PRESSURE AND LEAKAGE TESTING SHALL BE IN CONFORMANCE WITH NHDES ENV-WQ 704.09 "FORCE MAIN AND PRESSURE SEWER TESTING".

A-03. SEWER COLLECTION SYSTEMS:
A. A SEWER COLLECTION SYSTEM IS THAT SYSTEM OF SEWERS THAT TRANSPORT WASTEWATER FROM BUILDING SEWERS TO THE WASTEWATER TREATMENT/DISPOSAL SYSTEM.
B. NO CONNECTIONS OF ROOF DRAINS, AREA DRAINS, FOUNDATION DRAINS, CELLAR DRAINS OR OTHER CLEAN WATER SOURCES OR ANY STORM DRAINS WILL BE ALLOWED TO BUILDING OR COLLECTION SEWERS.
C. THE SIZE OF COLLECTION SEWERS SHALL BE AS SHOWN ON THESE DRAWINGS.
D. DEPTH: SEWERS SHALL BE BURIED TO A MIN. DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MIN. DEPTH OF 4' BELOW GRADE IN ALL CROSS-COUNTRY LOCATIONS. RIGID FOAM INSULATION SHALL BE USED, WHERE INDICATED ON DRAWINGS.
E. SLOPE, VELOCITY: ALL SEWERS SHALL BE INSTALLED WITH NOT LESS THAN THE SLOPES SHOWN BELOW:
10" DIAMETER PIPE = 0.28 (FEET/100 FEET)
8" DIAMETER PIPE = 0.40 (FEET/100 FEET)
F. CHANGES IN PIPE SIZE: WHEN A SMALLER SEWER JOINS A LARGE ONE, THE INVERT OF THE LARGER SEWER SHALL BE LOWERED SUFFICIENTLY TO MAINTAIN THE SAME ENERGY GRADIENT.
G. MATERIAL: PVC SDR 35, ASTM D3034, WITH PUSH-ON GASKETED JOINTS. GASKETS SHALL CONFORM TO ASTM D3212. SEWER JOINTS SHALL BE CONSTRUCTED TO MINIMIZE INFILTRATION AND TO PREVENT THE ENTRANCE OF ROOTS INTO THE SYSTEM.
H. TRENCHING: LEDGE, ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE A MINIMUM CLEARANCE OF SIX INCHES BELOW AND ON EACH SIDE OF ALL PIPES.
I. BEDDING: SEE TRENCH DETAILS THIS DRAWING FOR MATERIALS. TRENCH BACKFILL SHALL BE OF A SUITABLE NATIVE MATERIAL FREE FROM DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER, OR OTHER UNSTABLE MATERIALS.
J. LEAKAGE TESTS: UPON COMPLETION OF SEWER MAIN CONSTRUCTION, THE SEWER LINE SHALL BE TESTED IN ACCORDANCE WITH THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULES (ENV-WQ704.06). LEAKAGE TESTS FOR GRAVITY SEWERS SHALL BE COMPLETED BY LOW PRESSURE AIR TESTS ONLY IN CONFORMANCE WITH ASTM #F1417-92 OR UNI-B-6 METHODS.
K. DEFLECTION TESTING: ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5% OF AVERAGE INSIDE DIAMETER.
L. INSTALLATION: PIPE SHALL BE LAID WITH BELL ENDS FACING UPGRADE AND LAYING SHALL START AT THE DOWNGRADE END.
M. PROTECTION OF WATER SUPPLIES (SEE DETAIL 8, THIS SHEET)
1. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER OR SEWER APPURTENANCE WHICH WOULD PERMIT THE PASSAGE OF SEWAGE OR POLLUTED WATER INTO THE POTABLE SUPPLY. NO WATER PIPE SHALL PASS THROUGH OR COME IN ANY CONTACT WITH ANY PART OF A SEWER OR SEWER MANHOLE.
2. NO SEWER SHALL BE LOCATED WITHIN THE WELL PROTECTIVE RADII ESTABLISHED IN ENV-WS 300 FOR ANY PUBLIC WATER SUPPLY WELL OR WITHIN 100 FEET OF ANY PRIVATE WATER SUPPLY WELL.
3. SEWERS SHALL BE LOCATED TO MAINTAIN A MINIMUM OF TEN FEET HORIZONTAL CLEARANCE FROM ANY EXISTING OR PROPOSED WATER MAIN.
4. A DEVIATION FROM THE SEPARATION REQUIREMENTS OF (B) OR (C) ABOVE SHALL BE ALLOWED WHERE NECESSARY TO AVOID CONFLICT WITH SUBSURFACE STRUCTURES, UTILITY CHAMBERS, AND BUILDING FOUNDATIONS PROVIDED THAT THE SEWER IS CONSTRUCTED IN ACCORDANCE WITH THE FORCE MAIN CONSTRUCTION REQUIREMENTS SPECIFIED IN ENV-WQ 704.08.
5. WHENEVER SEWERS MUST CROSS WATER MAINS, THE SEWER SHALL BE CONSTRUCTED AS FOLLOWS:
a) VERTICAL SEPARATION OF THE SEWER AND WATER MAIN SHALL BE NOT LESS THAN 18 INCHES, WITH WATER ABOVE SEWER; AND
b) SEWER PIPE JOINTS SHALL BE LOCATED AT LEAST 9 FEET HORIZONTALLY FROM THE WATER MAIN.
6. WATER-SEWER SEPARATION SHALL COMPLY WITH ENV-WQ 704.19 OR A WAIVER MUST BE REQUESTED FROM THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.

A-04. MANHOLES
A. DIAMETER: THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES; LARGE DIAMETERS ARE PREFERRED FOR CONNECTION TO LARGE DIAMETER SEWERS. A MINIMUM ACCESS DIAMETER OF 30 INCHES SHALL BE PROVIDED.
B. FLOW CHANNEL: FLOW CHANNELS SHALL BE PROVIDED IN THE BASE OF ALL MANHOLES AND THE FLOW CHANNEL THROUGH MANHOLES SHOULD BE MADE TO CONFORM IN SHAPE AND SLOPE TO THAT OF THE SEWERS.
C. MANHOLES SHALL BE OF THE PRE-CAST CONCRETE TYPE AND SHALL MEET ALL THE REQUIREMENTS OF THE NEW HAMPSHIRE CODE OF ADMINISTRATIVE RULE ENV-WQ 704.13. MANHOLES SHALL BE WATERPROOFED ON THE EXTERIOR.
D. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A RUBBER-GASKETED FLEXIBLE WATERTIGHT CONNECTION THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE.
E. ALL MANHOLES SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH THE FOLLOWING PROCEDURE: MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST.
F. THE MANHOLE VACUUM TEST SHALL CONFORM TO ENV-WQ 704.17 AND THE FOLLOWING:
1. THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10" HG ; AND
2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR A 1" HG PRESSURE DROP TO 9" HG SHALL BE 10 MINUTES, REGARDLESS OF MANHOLE DEPTH.
G. THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN "F" ABOVE.

GENERAL
A. "AS-BUILT" INFORMATION SHALL BE PREPARED BY THE CONTRACTOR AT THE TIME OF COMPLETION OF THE SYSTEM PER CITY OF LEBANON DPW STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORD NORTHING, EASTING (STATE PLANE COORDINATES) AND ELEVATION ON ALL UNDERGROUND UTILITY LINES AT BENDS, GRADE CHANGES, CROSSINGS WITH OTHER UNDERGROUND UTILITIES, STRUCTURES, VALVES AND CLEANOUTS DURING CONSTRUCTION. RECORD PLANS SHALL BE COMPILED AND SUBMITTED IN AUTOCAD FORMAT WITH THREE SETS OF HARD COPY TIE SHEETS. RECORD UTILITY PROFILES AND DETAIL SHEETS NEED TO BE ANNOTATED TO REFLECT ANY PROJECT MODIFICATIONS OR ADDENDA DISTRIBUTED DURING THE CONSTRUCTION PHASE. RECORD PROFILES AND DETAIL SHEETS SHALL BE PROVIDED IN PDF FORMAT WITH THREE SETS OF FULL SIZE HARD COPIES.

STATE OF NEW HAMPSHIRE PROFESSIONAL ENGINEER LICENSED No. 13256
Stamp

Rev. No.	Date	Description	Chkd.
1	02/24/2020	AMENDMENT TO APPROVED SITE PLAN	

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.863.6225 • fax 802.863.6306
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766
tel. 603.442.9333
www.engineeringventures.com

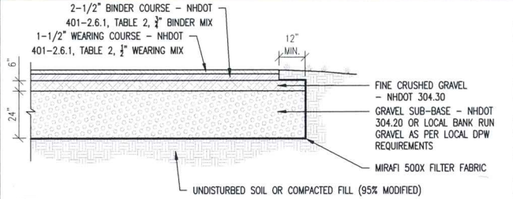
Client: Tackle Partners, LLC
c/o Meg Carlton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3068

Sheet Title: Sewer Details and Notes

Project Title: 37 Spencer Street Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

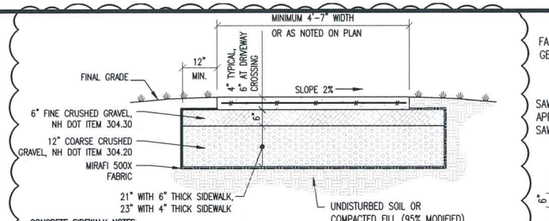
Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	Not to Scale
Date:	October 14, 2019

C4.2
19327.01



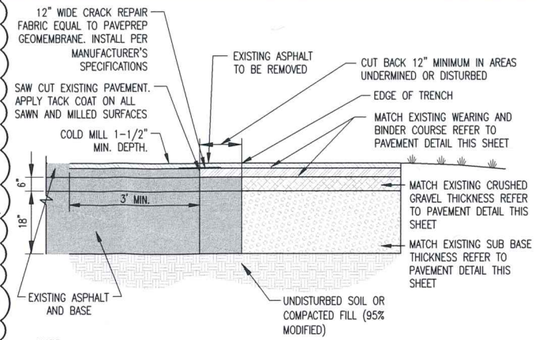
NOTES:
1. ALL SUBBASE MATERIALS SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR).
2. ROAD/PARKING LOT PAVEMENT CROSS SECTION BASED ON VTRANS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ITEM 401, TABLE 2.

PAVEMENT DETAIL
NOT TO SCALE 1



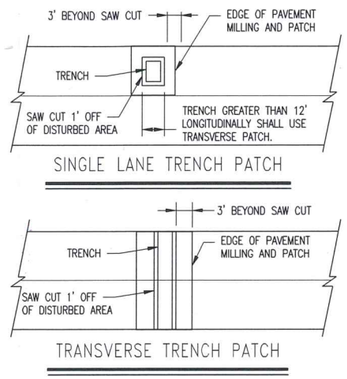
CONCRETE SIDEWALK NOTES:
1. PLACE A TOOLED JOINT 1/8" WIDE AND AT LEAST 1/3 OF THE DEPTH, TYPICALLY AT INTERVALS MATCHING THE SIDEWALK WIDTH, OR AS NOTED ON PLANS (NOT TO EXCEED 10'-0").
2. PLACE EXPANSION JOINT AS INDICATED ON PLANS, NOT TO EXCEED 20'-0" MAX. EXPANSION JOINTS SHALL BE DOWELED WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (ONE END TO BE GREASED).
3. BROOM FINISH WITH SMOOTH TROWELED EDGES. TREAT WITH SILANE-SILOXANE OR EQUAL.
4. CAST-IN-PLACE CONCRETE TO BE 4000 psi CONCRETE, 5%-7% AIR ENTRAINMENT WITH 6x6-W4.0xW4.0 REINFORCING CENTERED IN SIDEWALK.
5. WHERE SIDEWALK IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, SIDEWALK SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (PORTION OF DOWEL IN SIDEWALK TO BE GREASED).
6. WHERE SIDEWALK IS ADJACENT TO CURB, BOLLARD OR OTHER HARD FEATURE, INSTALL 1/2" EXPANSION MATERIAL (FULL DEPTH OF SIDEWALK), BETWEEN FEATURE AND SIDEWALK.

CONCRETE SIDEWALK DETAIL
NOT TO SCALE 4

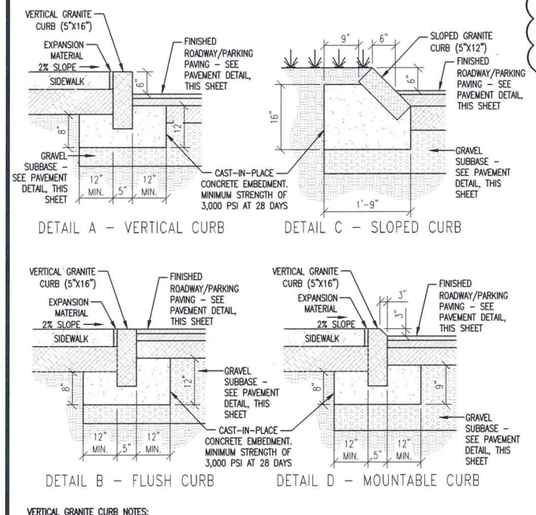


NOTE:
THIS METHOD OF PAVEMENT JOINT SHALL BE USED FOR ANY APPLICATION OR CONSTRUCTION WHERE PROPOSED PAVEMENT AND BASE WILL BE CONNECTED TO EXISTING PAVEMENT AND BASE.

TRENCH CROSS SECTION DETAIL

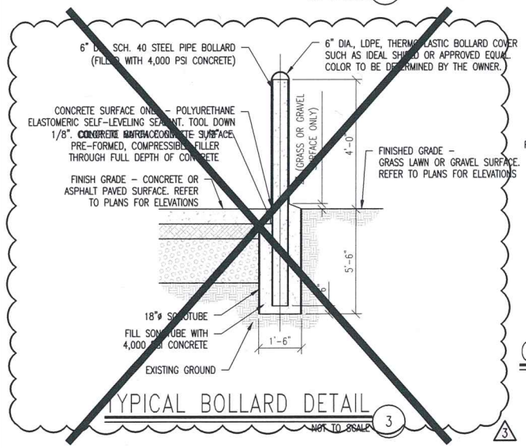


ASPHALT PAVEMENT TRENCH PATCH DETAIL
NOT TO SCALE 6



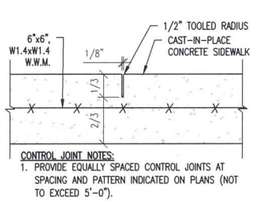
VERTICAL GRANITE CURB NOTES:
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS.
2. WHERE CURB IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, CURB SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6"oc (PORTION OF DOWEL IN CURB TO BE GREASED).
3. WHERE CURB IS ADJACENT TO SIDEWALK, BOLLARD OR OTHER HARD FEATURE, BACKSIDE OF CURB SHALL BE SAW CUT. 1/4" EXPANSION MATERIAL (FULL DEPTH OF CURB), SHALL BE INSTALLED BETWEEN FEATURE AND CURB.

GRANITE CURB DETAILS
NOT TO SCALE 2



TYPICAL BOLLARD DETAIL
NOT TO SCALE 3

CONCRETE NOTES:
1. CLASS B CONCRETE SHALL HAVE:
   A. MIN. COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS
   B. AIR ENTRAINMENT OF 5% TO 7% BY VOLUME.
   C. MAXIMUM WATER:CEMENT RATIO= 0.60.
   D. SLUMP: 2-4 INCHES BEFORE ADDITION OF WATER REDUCER, 6-8 INCHES AFTER THE ADDITION OF WATER REDUCER.
2. PLACE NO CONCRETE WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT OR MORE THAN 90 DEGREES FAHRENHEIT.
3. NO CONCRETE SHALL BE DROPPED MORE THAN SIX FEET INSIDE A FORM.
4. MAINTAIN TEMPERATURE OF CONCRETE SURFACE AT MINIMUM 50 DEGREES FAHRENHEIT FOR 72 HOURS AFTER PLACING CONCRETE. PREHEAT ALL ENCLOSURES FOR A MINIMUM OF 2 HOURS TO PROVIDE A MIN. SURFACE TEMPERATURE OF 45 DEGREES FAHRENHEIT.
5. ALLOW TO SET AND CURE ALL THRUST BLOCKS, CONCRETE SUPPORTS, AND ANCHORS A MINIMUM OF 24 HOURS BEFORE BACKFILLING.
6. COMPLETELY CURE AND SET CONCRETE BEFORE ANY HYDROSTATIC OR LEAKAGE TESTING OF PIPELINE.
7. NONSHRINK GROUT SHALL BE HALCO TRADEMARK, AS MANUFACTURED BY LEHN & FINK INDUSTRIAL PRODUCTS.
8. DO NOT PLACE ANY MORTAR OR GROUT WHEN AMBIENT TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT.
9. MORTAR FOR MANHOLES SHALL CONSIST OF THE FOLLOWING:
   A. CEMENT–TYPE II, ASTM C150.
   B. HYDRATED LIME–TYPE N, ASTM C207.
   C. SAND– ASTM C 33, FINE AGGREGATES FOR CONCRETE.
   D. WATER–CLEAN, SUITABLE FOR DRINKING.
10. MIX(BY VOLUME): 1 PART CEMENT, 1/2 PART LIME, 4 1/2 PARTS SAND.

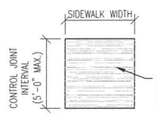


EXPANSION JOINT NOTES:
1. PROVIDE (1) EXPANSION JOINT EVERY 20'-0" MAX.
2. PROVIDE (2) EXPANSION JOINTS AT EVERY DRIVEWAY INTERSECTION
3. WHERE SIDEWALK IS ADJACENT TO CURB, BOLLARD OR OTHER HARD FEATURE, INSTALL 1/2" EXPANSION MATERIAL (FULL DEPTH OF SIDEWALK), BETWEEN FEATURE AND SIDEWALK.
4. WHERE SIDEWALK IS ADJACENT TO ENTRY/EXIT DOOR PADS WITH FROST WALL FOUNDATIONS, SIDEWALK SHALL BE DOWELED TO PAD WITH 24" LONG #4 DOWELS (CENTERED) AT 1'-6" oc (PORTION OF DOWEL IN SIDEWALK TO BE GREASED).
5. CAULK ALL EXPANSION JOINTS WITH COLOR MATCHING SILICONE CAULKING.

EXPANSION JOINT

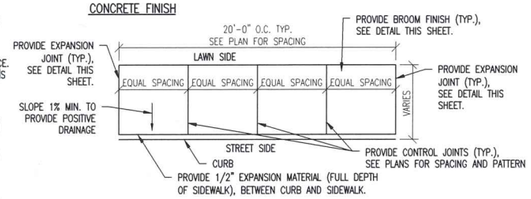
CONTROL JOINT NOTES:
1. PROVIDE EQUALLY SPACED CONTROL JOINTS AT SPACING AND PATTERN INDICATED ON PLANS (NOT TO EXCEED 5'-0").

CONTROL JOINT



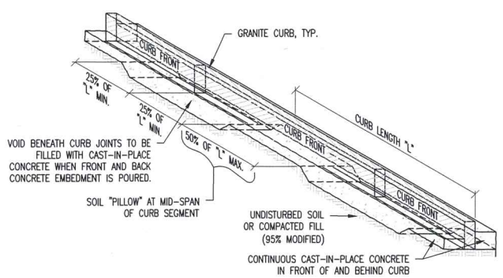
SIDEWALK FINISH NOTES:
1. TREAT WITH SILANE–SILOXANE OR EQUAL.

CONCRETE FINISH



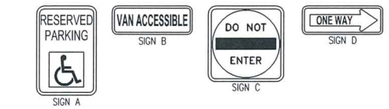
JOINT SPACING AND LAYOUT

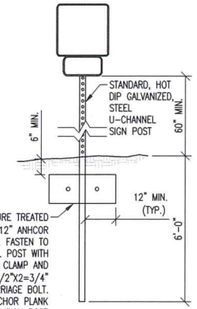
CONC. SIDEWALK JOINTS, FINISH, AND NOTES
NOT TO SCALE 5



NOTES:
1. GRANITE CURBS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT AND STATE SPECIFICATIONS.
2. WHERE CURB IS ADJACENT TO SIDEWALK, BOLLARD OR OTHER HARD FEATURE, BACKSIDE OF CURB SHALL BE SAW CUT. 1/4" EXPANSION MATERIAL (FULL DEPTH OF CURB), SHALL BE INSTALLED BETWEEN FEATURE (EXCLUDING SIDEWALKS) AND CURB.
3. ROADWAY/PARKING PAVING AND SECTION TO MATCH EXISTING OR AS DIRECTED.

GRANITE CURB EMBEDMENT
NOT TO SCALE 7



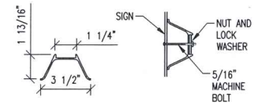


SIGN POST INSTALLATION

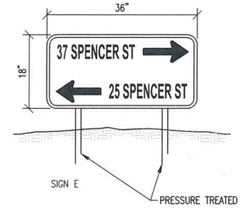
SIGN KEY:

SIGN	MUTCD DESIGNATIONS	COMMON NAME	SIZE
A	R7-8	ACCESSIBLE PARKING	12" x 18"
B	R7-8P	VAN ACCESSIBLE PLACARD	12" x 18"
C	R5-1	DO NOT ENTER	24" X 24"
D	R6-1R	ONE WAY (PLAQUE)	30" X 12"

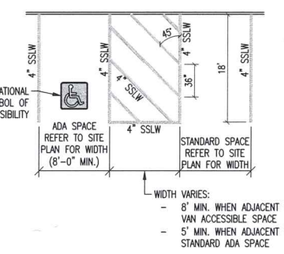
SIGNS



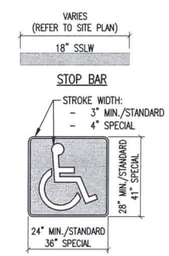
POST SECTION AND SIGN MOUNTING



SIGN AND POST DETAILS
NOT TO SCALE 8



PARKING LOT STRIPING



INTERNATIONAL SYMBOL OF ACCESSIBILITY

PAVEMENT MARKINGS DETAIL
NOT TO SCALE 9

STATE OF NEW HAMPSHIRE — Nicholas J. Fiore — No. 13286 — LICENSED PROFESSIONAL ENGINEER — Stamp

Rev. No.	Description	Chkd.
1	10/28/2019 – REVISIONS PER STAFF REVIEW	
2	11/18/2019 – REVISIONS PER STAFF REVIEW	
3	02/24/2020 – AMENDMENT TO APPROVED SITE PLAN	

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.865.5221 • fax 802.865.6306
85 Mechanic Street, Suite 5 Lebanon, NH 03766
tel. 603.442.3333
www.engineeringventures.com

Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
New Hampshire 03750
Etna, NH (603) 642-3088

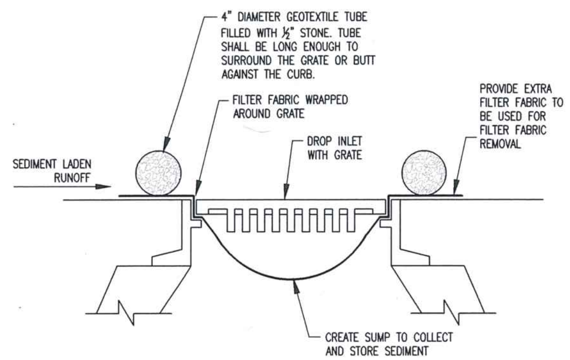
Sheet Title: Site Details and Notes

Project Title: 37 Spencer Street
Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	Not to Scale
Date:	October 14, 2019

C4.3
19327.01

S:\Projects\19-19327 Mt Lebanon 37 Spencer St Renovations\dwg\Civil Title\19327 C4.3 - Construction Details.dwg



MAINTENANCE:

1. CONTRACTOR TO CLEAN AFTER EVERY STORM. IF THE BARRIER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PASSES FILTERED WATER, THE SEDIMENT SHALL BE REMOVED AND THE BARRIER SHALL BE REPLACED. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
2. THE FABRIC SHALL BE REMOVED WHEN THE DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED.

PAVED AREA INLET PROTECTION DETAIL

2

SCALE: NONE

SEEDING SPECIFICATION:

URBAN MIX GRASS SEED– FOR USE IN GRASSED LAWN AREAS AROUND BUILDING AND PARKING – TEMPORARY AND PERMANENT APPLICATIONS		
% BY WEIGHT	LBS. LIVE SEED BY ACRE	TYPE OF SEED
66.0	40.0	CREEPING RED FESCUE
33.0	20.0	KENTUCKY BLUEGRASS
100	60.0 # LIVE SEED/	ACRE

CONSERVATION MIX GRASS SEED– FOR USE IN ALL OTHER AREAS		
% BY WEIGHT	LBS. LIVE SEED PER ACRE	TYPE OF SEED
50	15.0	SMOOTH BROMEGRASS
17	5.0	RYEGRASS
33	10.0	BIRDSFOOT TREFOIL
100	30.0 # LIVE SEED/ACRE	

FERTILIZER– 10 LBS. PER 1000S.F.
SPRING SEEDING
FALL SEEDING

LIME– 90 LBS. PER 1000S.F.
DOLOMITIC GROUND LIMESTONE
NOT LESS THAN 85% OF THE TOTAL CARBONATE

TOP SOIL
4" MINIMUM APPROVED TOPSOIL

STRAW MULCH– 2 BALES PER 1000S.F.
APPLY BINDER OR NETTING AS NEEDED

SEED SEPCIFICATION

2

NOT TO SCALE

EROSION CONTROL NOTES

WINTER EROSION CONTROL NOTES

1. TO ADEQUATELY PROTECT WATER QUALITY DURING COLD WEATHER AND DURING SPRING RUNOFF, THE ADDITIONAL STABILIZATION TECHNIQUES SPECIFIED IN THIS SECTION SHALL BE EMPLOYED DURING THE PERIOD FROM OCTOBER 15 THROUGH MAY 1.
2. THE AREA OF EXPOSED, UNSTABILIZED SOIL SHALL BE LIMITED TO ONE ACRE AND SHALL BE PROTECTED AGAINST EROSION BY THE METHODS DESCRIBED IN THIS SECTION PRIOR TO ANY THAW OR SPRING MELT EVENT. THE ALLOWABLE AREA OF EXPOSED SOIL MAY BE INCREASED IF A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY NHDES.
3. ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
4. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15TH, OR WHICH ARE DISTURBED AFTER OCTOBER 15TH, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
5. AFTER OCTOBER 15TH, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF CRUSHED GRAVEL PER NHDOT ITEM 304.3.
6. ALL PROPOSED STABILIZATION IN ACCORDANCE WITH THE ABOVE SHALL BE COMPLETED WITHIN A DAY OF ESTABLISHING THE GRADE THAT IS FINAL OR THAT OTHERWISE WILL EXIST FOR MORE THAN 5 DAYS.

GENERAL EROSION CONTROL NOTES

1. THE "ON-SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON-SITE FROM DAY-TO-DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE DISTURBED AT ANY ONE TIME DURING DEVELOPMENT. WHEN LAND IS DISTURBED, THE DISTURBANCE SHALL BE KEPT TO THE SHORTEST PRACTICAL DURATION AS APPROVED BY THE OWNER'S REP.
3. DUST SHALL BE CONTROLLED WITH WATER DISTRIBUTED BY A TRUCK MOUNTED SPRAY BAR. CALCIUM CHLORIDE(AASHTO M 144) OR SODIUM CHLORIDE(AASHTO M 143) SHALL BE USED AS DIRECTED BY THE OWNER'S REP.
4. ALL EROSION AND STORMWATER CONTROL SYSTEMS SHALL BE INSPECTED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE OCCURRENCE OF A STORM EVENT OF 0.5" OR GREATER. NEEDED REPAIRS SHALL BE MADE IMMEDIATELY. SEDIMENT DEPOSITS SHALL BE REMOVED AS THEY ACCUMULATE AND PLACED IN AREAS WHERE FURTHER EROSION IS UNLIKELY.
5. A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, SHALL BE SUBMITTED TO THE NHDES WITHIN 24 HOURS OF EACH INSPECTION THAT:
   A) DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
   B) IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
   C) INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT; AND
6. RETAIN A COPY OF THE REPORT PREPARED PURSUANT TO (5), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL, STATE, AND LOCAL OFFICIALS
7. ALL PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH MOVING OPERATIONS.
8. DETENTION BASINS AND SWALES SHALL BE INSTALLED PRIOR TO ROUGH GRADING THE SITE.
9. ALL DITCHES AND SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
10. ALL ROADWAYS AND PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
11. ALL CUT AND FILL SLOPES SHALL BE SEEDED/LOAMED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
12. AN AREA SHALL BE CONSIDERED STABLE IF ONE OF THE FOLLOWING HAS OCCURRED:
   - BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   - A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   - A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIPRAP HAS BEEN INSTALLED; OR
   - EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
13. LOT DISTURBANCE OTHER THAN THAT SHOWN ON THE APPROVED PLANS SHALL NOT COMMENCE UNTIL AFTER THE ROADWAY HAS THE BASE COURSE TO DESIGN ELEVATION AND THE ASSOCIATED DRAINAGE IS COMPLETE AND STABLE.
14. APPROPRIATE SILTATION/EROSION/TURBIDITY CONTROLS SHALL BE IN PLACE PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND REMAIN IN PLACE UNTIL THE AREA IS STABILIZED. SILT FENCE(S) MUST BE REMOVED ONCE THE AREA IS STABILIZED.
15. DISCHARGE FROM DEWATERING OF WORK AREAS SHALL BE TO SEDIMENT BASINS THAT ARE:
   A) LOCATED IN UPLANDS;
   B) LINED WITH HAY BALES OR OTHER ACCEPTABLE SEDIMENT TRAPPING LINERS;
   C) SET BACK AS FAR AS POSSIBLE FROM WETLANDS AND SURFACE WATERS, IN ALL CASES WITH A MINIMUM OF 20 FEET OF UNDISTURBED VEGETATED BUFFER.
16. WITHIN THREE DAYS OF FINAL GRADING, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED BY SEEDING AND MULCHING DURING THE GROWING SEASON, OR IF NOT WITHIN THE GROWING SEASON, BY MULCHING WITH TACK OR NETTING AND PINNING ON SLOPES STEEPER THAN 3:1.
17. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED WITHIN THE GROWING SEASON, ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY SEEDING AND MULCHING.
18. WHERE CONSTRUCTION ACTIVITIES HAVE BEEN TEMPORARILY SUSPENDED OUTSIDE THE GROWING SEASON, ALL EXPOSED AREAS SHALL BE STABILIZED WITHIN 14 DAYS BY MULCHING AND TACK. SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED BY MATTING AND PINNING.
19. PROPER HEADWALLS SHALL BE CONSTRUCTED WITHIN SEVEN DAYS OF CULVERT INSTALLATION.
20. CULVERT OUTLETS SHALL BE PROTECTED IN ACCORDANCE WITH THE DES BEST MANAGEMENT PRACTICES FOR URBAN STORMWATER RUNOFF MANUAL (JANUARY 1996) AND THE STORMWATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL HANDBOOK FOR URBAN AND DEVELOPING AREAS IN NEW HAMPSHIRE (AUGUST 1992).
21. THE CONTRACTOR RESPONSIBLE FOR COMPLETION OF THE WORK SHALL UTILIZE TECHNIQUES DESCRIBED IN THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROLS DURING CONSTRUCTION (DECEMBER 2008).
22. DO NOT PLACE THE BIORETENTION SYSTEM INTO SERVICE UNTIL ALL BMPS HAVE BEEN PLANTED AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
23. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM THE CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO BIORETENTION AREA DURING ANY STAGE OF CONSTRUCTION.
24. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.

EROSION CONTROL CONSTRUCTION SEQUENCE:

1. THE "ON-SITE EROSION CONTROL PLAN COORDINATOR" SHALL BE THE GENERAL CONTRACTOR, THIS INDIVIDUAL SHALL BE PRESENT ON SITE FROM DAY TO DAY, AND SHALL BE RESPONSIBLE FOR ENSURING THAT THE EROSION CONTROL MEASURES REQUIRED BY THE EROSION CONTROL PLAN, DETAILS AND NOTES, ARE PROPERLY INSTALLED AND MAINTAINED. THE ONSITE EROSION CONTROL PLAN COORDINATOR SHALL KEEP A WRITTEN RECORD OF INSPECTIONS AND MAINTENANCE OF EROSION CONTROL FEATURES. A COPY OF THESE PLANS AND INSPECTION/MAINTENANCE RECORDS SHALL BE KEPT ONSITE AT ALL TIMES.
2. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION, WITH THE CONTRACTOR, OWNER, AND ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL EROSION CONTROL MEASURES DELINEATED ON THE PLANS AND ANY ADDITIONAL MEASURES THAT ARE NECESSARY TO MINIMIZE EROSION. THE CONTRACTOR SHALL HAVE EROSION CONTROL MATERIALS AND INSTALLATION EQUIPMENT ON SITE AT ALL TIMES.
3. IF POSSIBLE, ALL TEMPORARY EROSION CONTROL MEASURES REQUIRED FOR WORK PROPOSED DURING THE WINTER (BETWEEN OCTOBER 15 AND MAY 1), SHALL BE INSTALLED PRIOR TO OCTOBER 1.
4. PRIOR TO ANY OTHER WORK, SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE EROSION CONTROL PLAN. THESE SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
5. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
6. INSTALL INLET PROTECTION ON EXISTING AND NEW CATCH BASINS.
7. ROUGH GRADE AND STOCKPILE TOPSOIL SURROUNDED BY SILT FENCE.
8. STABILIZE EXPOSED SLOPES AND SOILS AS SOON AS GRADED, AND MAINTAIN UNTIL ADEQUATELY VEGETATED.
9. COMPLETE FINAL GRADING OF SITE. PLACE TOPSOIL AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
10. AFTER THE SITE IS APPROVED BY THE ENGINEER AS ADEQUATELY STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.

TEMPORARY/CONSTRUCTION EROSION CONTROL MEASURES:

1. HAY SHALL NOT BE USED.
2. SILT FENCES SHALL BE INSTALLED GENERALLY 10 FEET FROM THE BASE OF THE FILL SLOPES, OR AS SHOWN ON THE PLANS. THESE SHALL REMAIN IN PLACE UNTIL THE PROJECT SITE HAS BEEN STABILIZED. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES 6 INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A PROPER SEDIMENT BARRIER.
3. INSTALL STONE CHECK DAMS IN GRASS-LINED SWALES 50 FEET ON CENTER TO PREVENT SILT FROM WASHING INTO THE DRAINAGE SYSTEM DURING CONSTRUCTION. SEDIMENT SHALL BE REMOVED FROM BEHIND THE DAMS WHEN IT BECOMES 6 INCHES DEEP. STONE CHECK DAMS SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED.
4. DROP INLET PROTECTION SHALL BE PROVIDED AROUND ALL EXISTING AND PROPOSED CATCH BASINS. PROTECTION SHALL REMAIN UNTIL ALL DISTURBED AREAS ARE STABILIZED. SEDIMENT SHALL BE REMOVED FROM DROP INLET PROTECTION WHEN THE STORAGE CAPACITY HAS BEEN APPROXIMATELY 50% FILLED. GRAVEL WILL BE CLEANED OR REPLACED WHEN IT NO LONGER DRAINS PROPERLY.
5. EXCAVATED MATERIAL FROM EARTH EXCAVATION AND DITCH DIGGING SHALL BE DISPOSED OF OFFSITE OR USED FOR PROJECT FILL MATERIAL IF DETERMINED SUITABLE BY THE OWNER'S REPRESENTATIVE.
6. STOCKPILED MATERIAL (TOPSOIL, BORROW, ETC.) SHALL HAVE SILT FENCE CONSTRUCTED AROUND THE PERIMETER. THE STOCKPILED MATERIAL SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO PREVENT SOIL EROSION AND SEDIMENTATION OFF SITE. LOCATE STOCKPILES ON THE UPHILL SIDE OF DISTURBED AREAS, IF POSSIBLE. DURING WINDY CONDITIONS, STOCKPILED MATERIAL SHALL BE COVERED OR WATERED APPROPRIATELY TO PREVENT WIND EROSION.

PERMANENT EROSION CONTROL MEASURES:

1. GRASS LINED SWALES SHALL BE TOP SOILED, SODDED AND FERTILIZED AREAS WHICH EXHIBIT SIGNS OF EROSION SHALL BE RE-SODDED IMMEDIATELY AND MAINTAINED UNTIL SOD HAS PERMANENT HOLD AND IS HEALTHY.
2. WHEN CONSTRUCTION IS COMPLETED IN AN AREA, IT SHALL BE IMMEDIATELY TOP SOILED, SEEDED, FERTILIZED AND MULCHED.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL DISTURBED AREAS, INCLUDING WATERING, UNTIL THE AREA IS INSPECTED AND ACCEPTED BY THE OWNER OR ENGINEER.
4. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
5. RE-SEEDING SHALL BE DONE UNTIL ALL AREAS ARE COMPLETELY COVERED WITH A MATURE STRAND OF GRASS. AN AREA SHALL BE CONSIDERED COVERED WHEN THE ENTIRE SURFACE CONTAINS A VERDUROUS STAND OF GRASS. AREAS THAT, IN THE OPINION OF THE ENGINEER, ARE PREDOMINATELY WEEDS SHALL BE PLOWED UP, FINE GRADED, FERTILIZED AND RE-SEEDED IN THE MANNER SPECIFIED PREVIOUSLY, EXERCISING CAUTION NOT TO CAUSE DAMAGE TO NEW OR EXISTING PLANT MATERIAL.

STATE OF NEW HAMPSHIRE — PROFESSIONAL ENGINEER — No. 13286 — LICENSED
Stamp

Rev. No.	Date	Description	Chkd.
1	10/28/2019	REVISIONS PER STAFF REVIEW	
2	11/18/2019	REVISIONS PER STAFF REVIEW	

ENGINEERING VENTURES PC
208 Flynn Avenue, Suite 2A Burlington, VT 05401
tel. 802.863.6225 • fax 802.863.6306
85 Mechanic Street, Suite E2-3, Lebanon, NH 03766
tel. 603.442.9333
www.engineeringventures.com

Client:
Tackle Partners, LLC
c/o Meg Carleton
279 Dogford Road
Etna, New Hampshire 03750
(603) 643-3068

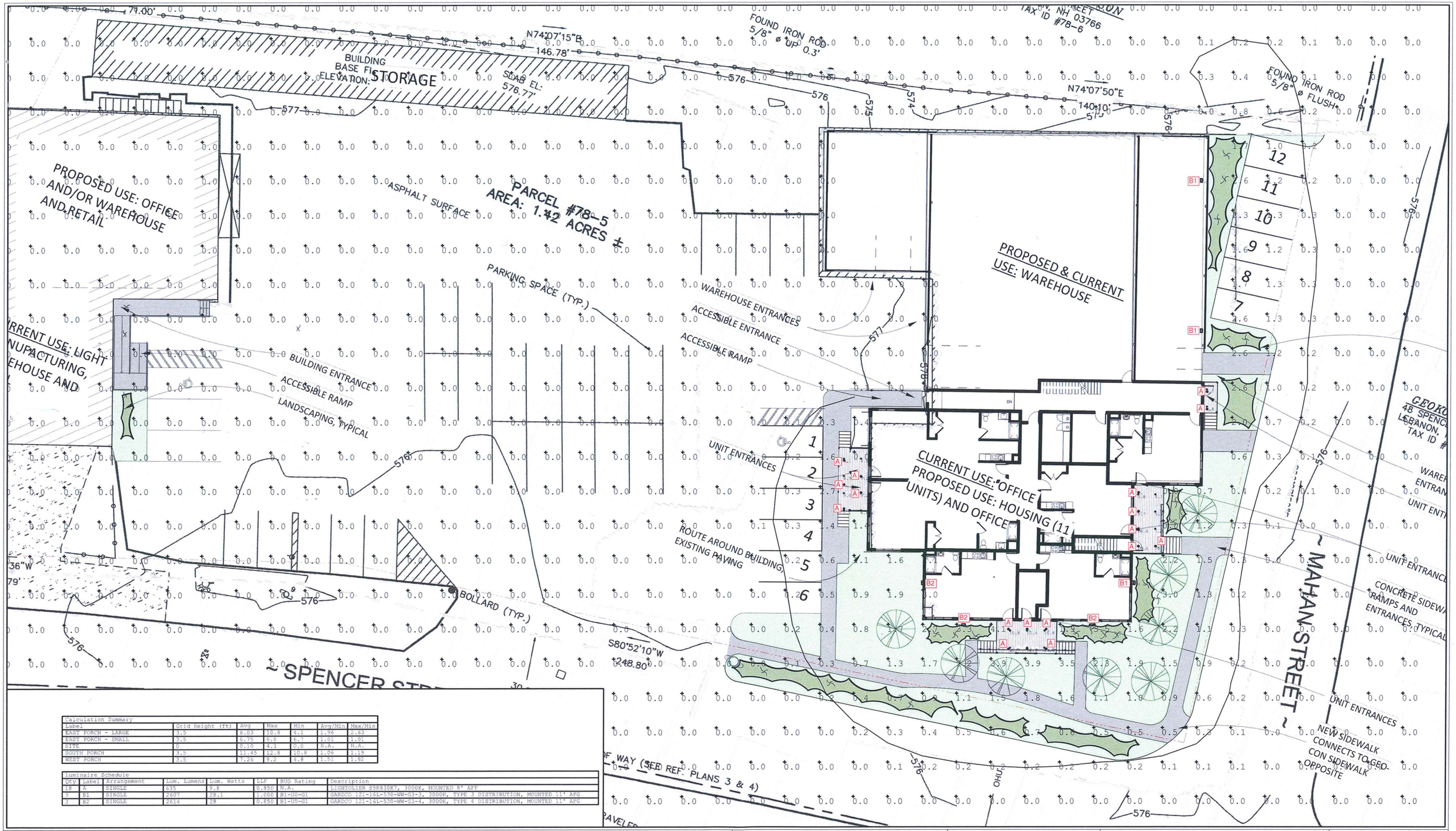
Sheet Title: Erosion Prevention and Sediment Control Details and Notes

Project Title: 37 Spencer Street Building and Site Renovations
City of Lebanon, Grafton County, New Hampshire

Designed By:	JWF
Checked By:	NAF
Drawn By:	JWF
Scale:	Not to Scale
Date:	October 14, 2019

C4.4

19327.01



Calculation Summary						
Label	Grid Height (ft)	Avg	Max	Min	Avg/Min	Max/Min
EAST PORCH - LARGE	3.5	8.03	10.8	4.1	1.96	2.63
EAST PORCH - SMALL	3.5	6.75	6.8	6.7	1.01	1.01
SITE	0	0.10	4.1	0.0	N.A.	N.A.
SOUTH PORCH	3.5	11.45	12.8	10.8	1.06	1.19
WEST PORCH	3.5	7.26	9.2	4.8	1.51	1.92

Luminaire Schedule							
Qty	Label	Arrangement	Lum. Lumens	Lum. Watts	LLF	BUG Rating	Description
18	A	SINGLE	635	9.8	0.850	N.A.	LIGHTOLIER SSR830K9, 3000K, MOUNTED 8' AFF
3	B1	SINGLE	2607	28.1	1.000	B1-U0-G1	GARDCO 121-16L-530-WW-G3-3, 3000K, TYPE 3 DISTRIBUTION, MOUNTED 11' AFG
3	B2	SINGLE	2614	28	0.850	B1-U0-G1	GARDCO 121-16L-530-WW-G3-4, 3000K, TYPE 4 DISTRIBUTION, MOUNTED 11' AFG

GENERAL DISCLAIMER:

Calculations have been performed according to IES standards and good practice Some differences between measured values and calculated results may occur due to tolerances in calculation methods, testing procedures, component performance, measurement techniques and field conditions such as voltage and temperature variations. Input data used to generate the attached calculations such as room dimensions, reflectances, furniture and architectural elements significantly affect the lighting calculations. If the real environment conditions do not match the input data, differences will occur between measured values and calculated values.

* LLF Determined Using Current Published Lamp Data

NOTE TO REVIEWER:

Total Light Loss Factor (LLF) applied at time of design is determined by applying the Lamp Lumen Depreciation (LLD) from current lamp manufacturer's catalog, a Luminaire Dirt Depreciation Factor (LDD) based on IES recommended values and a Ballast Factor (BF) from current ballast specification sheets. Application of an incorrect Light Loss Factor (LLF) will result in forecasts of performance that will not accurately depict actual results.

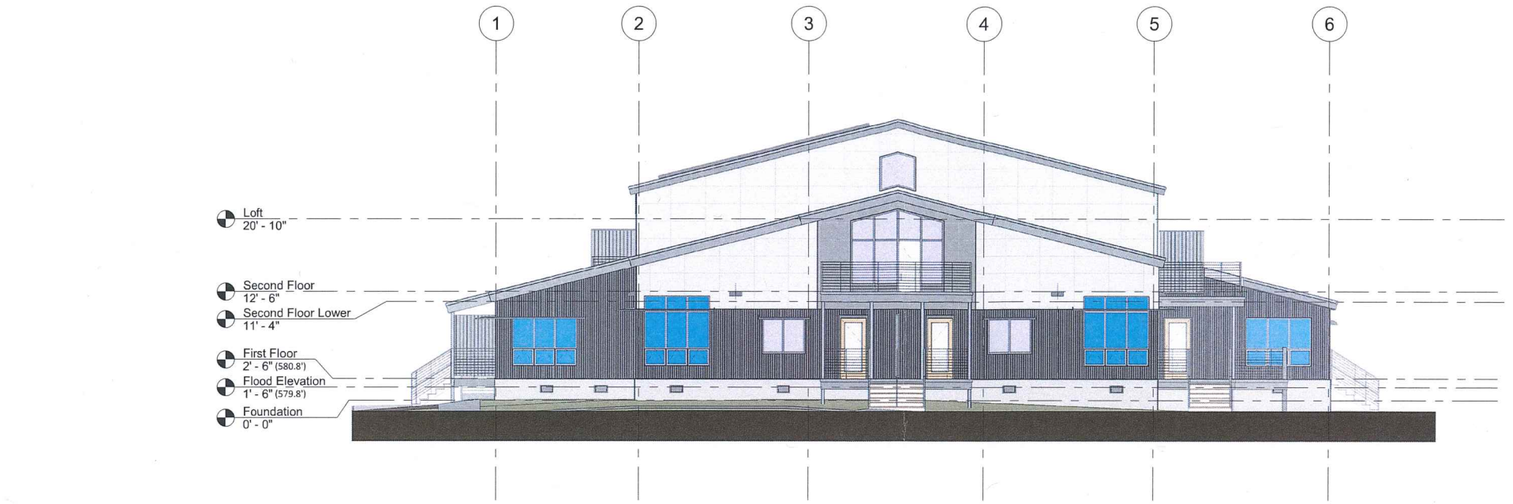
For proper comparison of photometric layouts, it is essential that you insist all

APEX
LIGHTING SOLUTIONS
THE POINT WHERE ALL ASSTRONG LINES CONVERGE
TELEPHONE 860.632.8766

PROJECT TITLE:
37 SPENCER ST

DRAWING TITLE:
EXTERIOR PHOTOMETRIC POINT CALCULATION

SCALE: NOT TO SCALE
DATE: 10/28/19
DRAWN BY: JW
SHEET:
SL-1



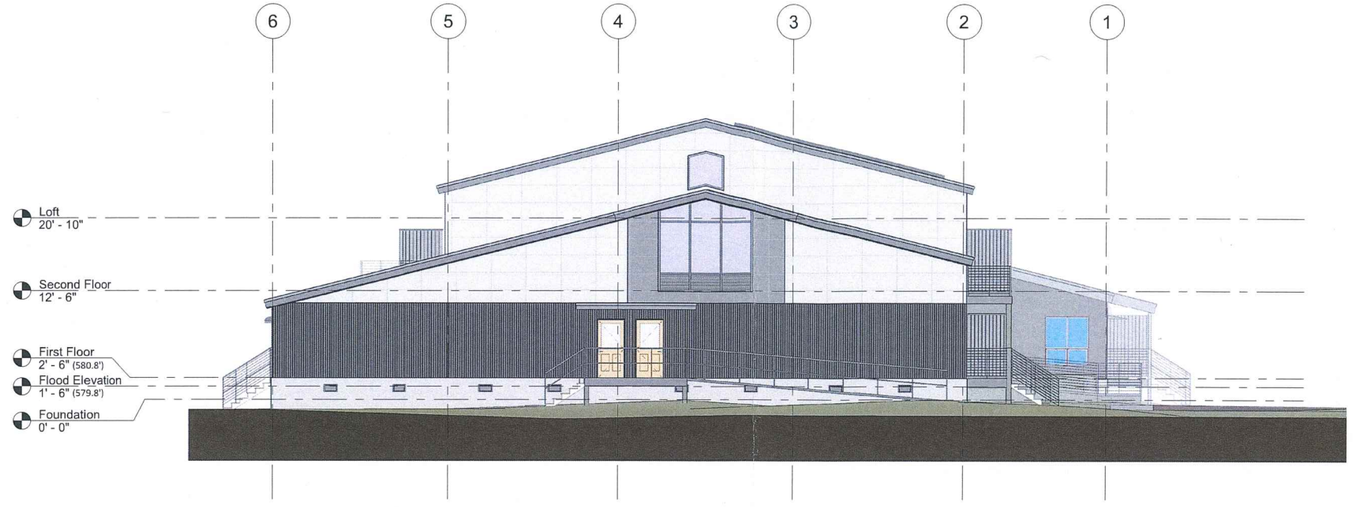
2 South elevation
1/8" = 1'-0"

1 West elevation
1/8" = 1'-0"

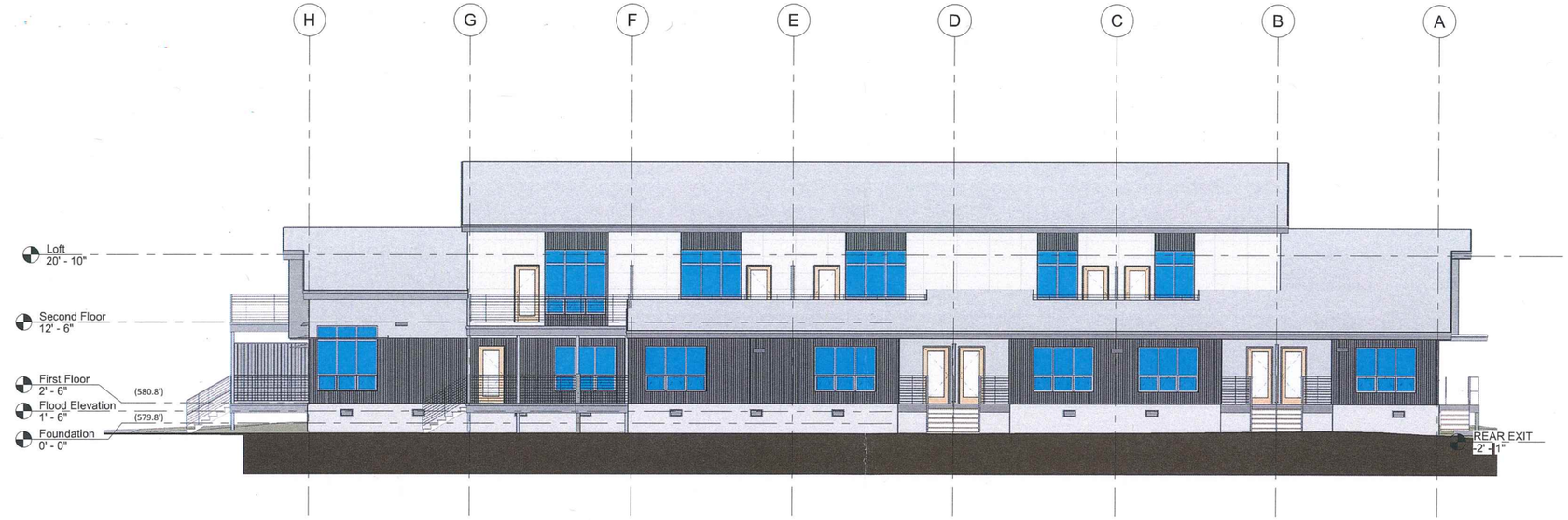
STUDIO NEXUS
ARCHITECTS + PLANNERS
PO Box 275, White River Junction VT 05001
802 275 5110 | www.studionexusarch.com

37 Spencer Street
Building Renovation

Elevations
SD-4
February 10, 2020
1/8" = 1'-0"



1 North elevation
1/8" = 1'-0"

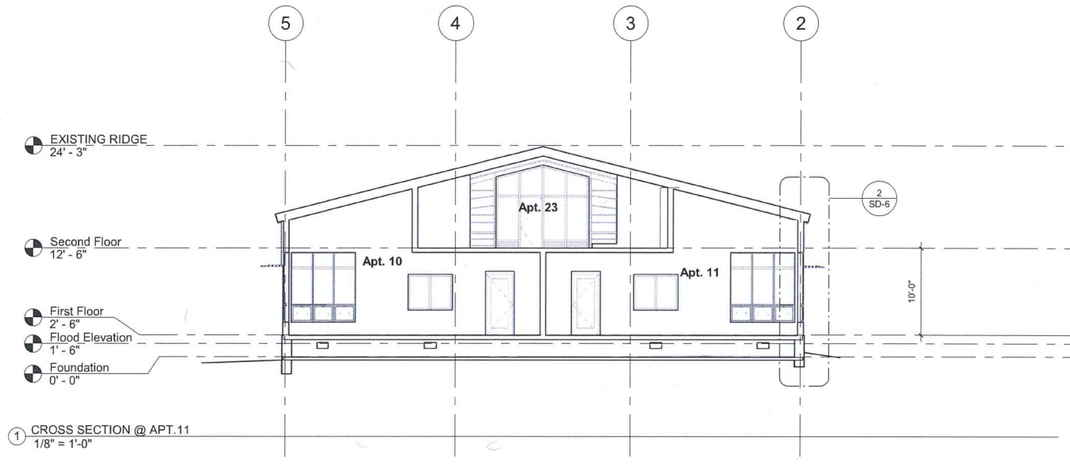


2 East elevation
1/8" = 1'-0"

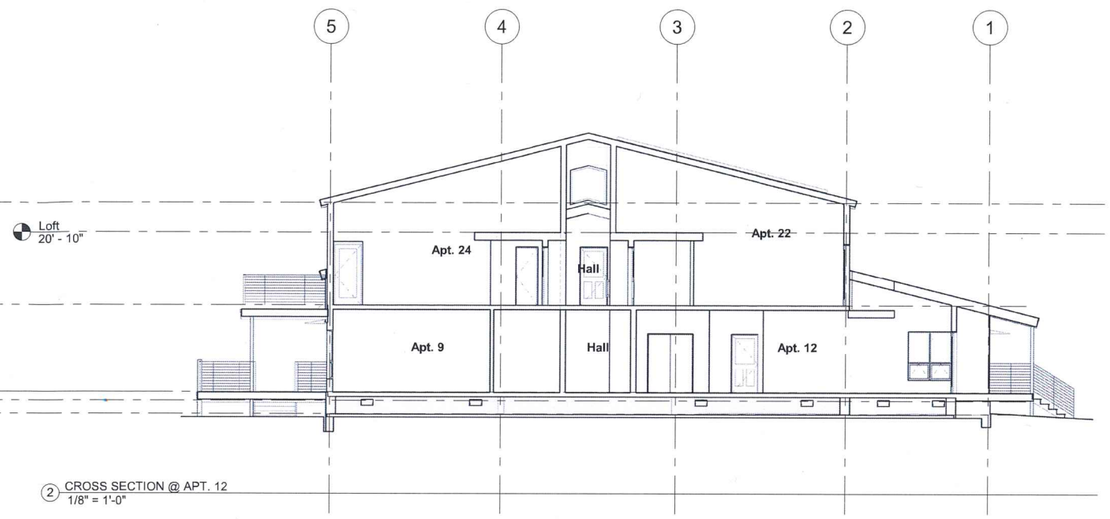
STUDIO NEXUS
ARCHITECTS + PLANNERS
PO Box 275, White River Junction VT 05001
802 275 5110 | www.studionexusarch.com

37 Spencer Street
Building Renovation

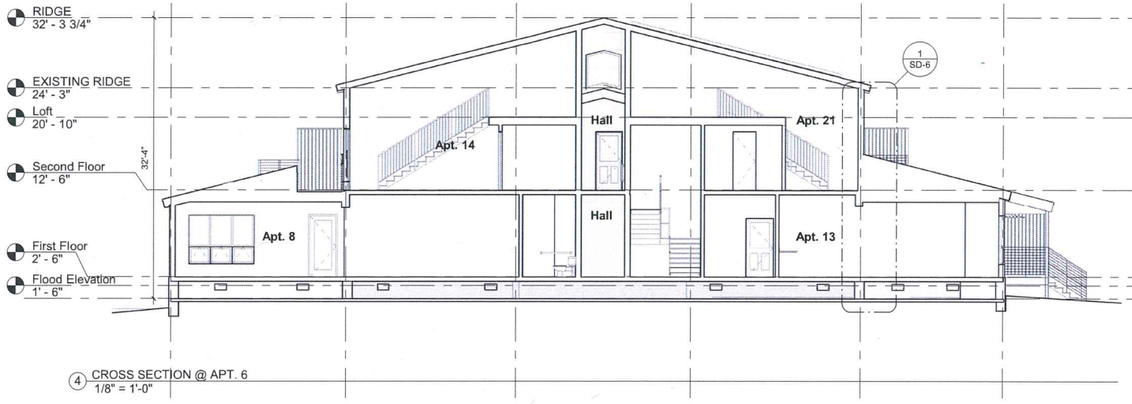
Elevations
SD-4.1
February 10, 2020
1/8" = 1'-0"



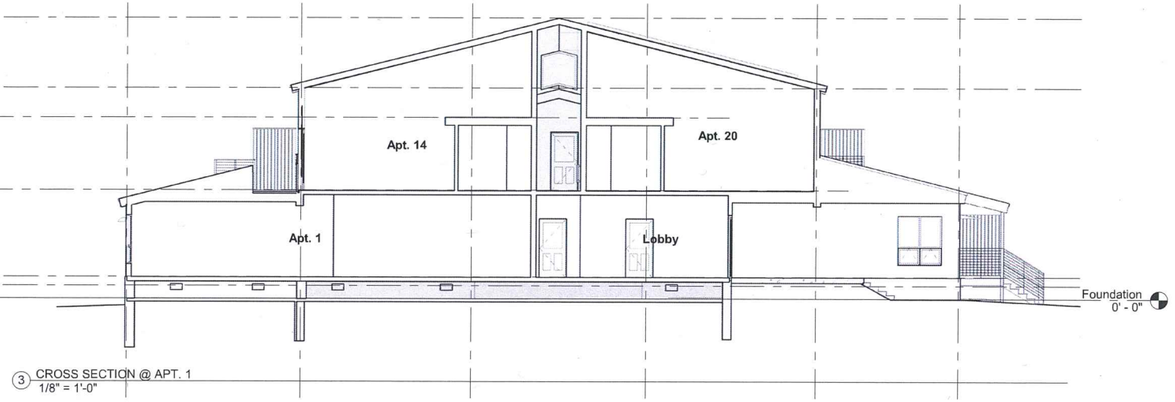
1 CROSS SECTION @ APT.11
1/8" = 1'-0"



2 CROSS SECTION @ APT. 12
1/8" = 1'-0"



4 CROSS SECTION @ APT. 6
1/8" = 1'-0"



3 CROSS SECTION @ APT. 1
1/8" = 1'-0"

STUDIO NEXUS
ARCHITECTS + PLANNERS
PO Box 275, White River Junction VT 05001
802 275 5110 | www.studionexusarch.com

37 Spencer Street
Building Renovation

Sections
SD-5
February 10, 2020
1/8" = 1'-0"

STUDIO NEXUS
ARCHITECTS + PLANNERS
PO Box 275, White River Junction VT 05001
802 275 5110 | www.studionexusarch.com

37 Spencer Street
Building Renovation

Renderings
SD-7
February 10, 2020